

GE Healthcare

# Typhoon™ FLA 7000 Control Software

## User Manual





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# 1 Preparations before use

## 1.1 Starting Typhoon FLA 7000 Control Software



### CAUTION

Please note that the GUI screens may change without notice.

**Note:** Minimum computer requirements:

OS:	Windows XP™ Professional SP3 (32-bit) or later, or Windows Vista™ Business SP1 (32-bit) or later
Memory:	More than 1 GB
Processor:	Intel Core 2 Duo processors
HD:	More than 80 GB
USB ports:	USB 2.0
Optical drives:	DVD-ROM or SuperMulti Drive
Monitor:	more than 1280 x 1024 resolution



### NOTICE

Do not connect any USB devices other than Typhoon FLA 7000 to the computer in which the Typhoon FLA 7000 Control Software is installed. Otherwise, it may cause malfunctions.

During reading, do not use any USB devices other than Typhoon FLA 7000 connected to the computer. If USB devices are used simultaneously, image data may be lost.

- 1 Turn on Typhoon FLA 7000 and peripheral devices.



### CAUTION

Do not insert a Storage phosphor screen in Typhoon FLA 7000 before turning on the machine. If an imaging plate is detected during the self-diagnosis of the Typhoon FLA 7000, the sensitivity of the Storage phosphor screen may deteriorate. The scanned data can then not be guaranteed.



## 1 Preparations before use

### 1.1 Starting Typhoon FLA 7000 Control Software

- 2 Turn on the computer.
- 3 Make sure that Typhoon FLA 7000 has completed the warm-up. Only the power lamp on the upper left panel on the front of Typhoon FLA 7000 is lit up when the warm-up is completed.
- 4 Start Typhoon FLA 7000 Control Software from the **Startup** menu, or use the shortcut key.



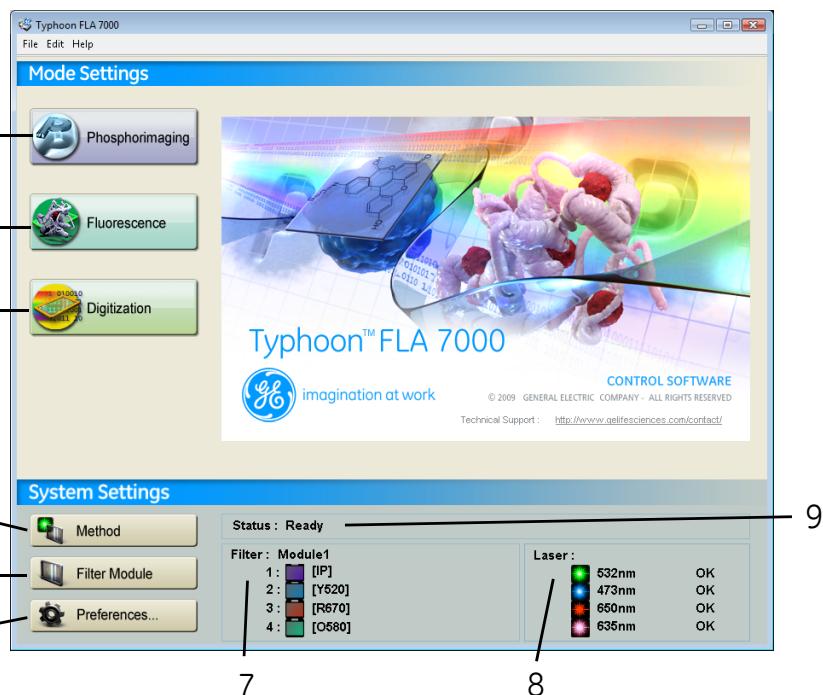
**Note:** After starting the Control Software, the condition is displayed in the Status area. Status messages are as follows:

- **Disconnected:**  
Cannot recognize Typhoon FLA 7000. Please check connection and power.
- **Warm-up:**  
Typhoon FLA 7000 is in self-diagnosis. Please wait.
- **Ready to use:**  
Ready

- 5 The main window of Typhoon FLA 7000 Control Software is displayed.



## 1.2 Control Software main window



No.	Name	No.	Name
1	<b>Phosphorimaging</b> Click when reading a Storage phosphor screen.	6	<b>Preferences...</b> Click to set the display menu, file format, or the Log/ Square Root of image data type.
2	<b>Fluorescence</b> Click when reading fluorescent samples.	7	<b>Filter</b> The loaded filters are displayed.
3	<b>Digitization</b> Click when digitizing.	8	<b>Laser</b> The conditions of the loaded laser units are displayed.  In this example, there are four types of laser units loaded: <ul style="list-style-type: none"> <li>• 532 nm laser,</li> <li>• 473 nm laser,</li> <li>• 650 nm laser,</li> <li>• 635 nm laser.</li> </ul> All the laser units are ready for operation (OK).

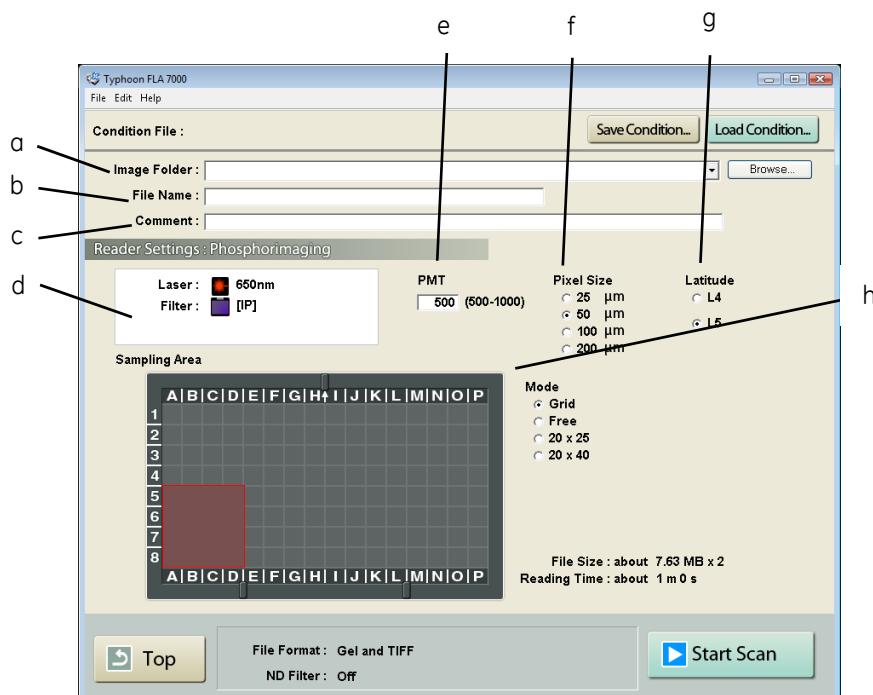
No.	Name	No.	Name
4	<b>Method</b> Click to register or erase combinations of lasers and filters.	9	<b>Status:Ready</b> The status of the FLA 7000 is displayed. When the status is Ready, The FLA 7000 is ready for scanning.
5	<b>Filter Module</b> Click to change or register the filter.		

# 2 Reading phosphorimaging samples

## 2.1 Setting the reading conditions

- Click the **Phosphorimaging** button.

The **Reader Settings** window for the Phosphorimaging mode is displayed.



Click **Top** to return to the main window from the Phosphorimaging mode.

- Make these settings before reading Storage phosphor screens.

Explanations for the various settings are found below.

Part	Function
a	<b>Image Folder:</b> Specify where the file is saved after reading by clicking the <b>Browse</b> button.
b	<b>File Name:</b> Enter a file name to save data of a read image. <b>Note:</b> You cannot start reading unless you enter a file name.
c	<b>Comment:</b> Enter a comment (optional). The comment is saved with the image as a file, and can be viewed with the analyzing software.

## 2 Reading phosphorimaging samples

### 2.1 Setting the reading conditions

Part	Function
d	<p><b>Laser:/Filter:</b> Before reading begins, make sure that the 650 nm laser is shown and the IP filter is selected in the <b>Setting field</b> as shown below.</p> <p>In Phosphorimaging reading, the 650 nm laser and IP filter are selected automatically.</p> <div style="border: 1px solid black; padding: 10px; text-align: center;">    <b>Laser :</b>  <b>650nm</b>  <b>Filter :</b>  <b>[IP]</b> </div> <p><b>Note:</b> To use the Phosphorimaging mode, the LD 650nm laser must be loaded, and the IP filter must be set. If these conditions are not fulfilled, the <b>Reader Settings</b> window for the Phosphorimaging mode cannot be accessed.</p>
e	<p><b>PMT:</b> You may set the voltage to be applied to the photo-multiplier tube (PMT) as an integral value within the predetermined range. The larger the value is, the higher the sensitivity.</p> <div style="display: flex; align-items: center;"> <span style="margin-right: 10px;">PMT :</span> <input style="width: 40px; height: 20px; border: 1px solid #ccc; border-radius: 5px; text-align: center; font-size: 10px; padding: 0 2px; margin-right: 10px;" type="text" value="500"/> <span>V (500-1000)</span> <div style="display: flex; justify-content: space-around; width: 150px;"> <span>500V</span> <span>Value</span> <span>1000V</span> </div> <div style="display: flex; justify-content: space-around; width: 150px;"> <span>Small</span> <span>Sensitivity</span> <span>Large</span> </div> <div style="display: flex; justify-content: space-around; width: 150px;"> <span>Low</span> <span>High</span> </div> </div>
f	<p><b>Pixel Size:</b> Set the pixel size for reading. Click to select from one of the four types, as shown on the left. A sample with a smaller pixel size is analyzed more finely.</p> <div style="display: flex; align-items: center; justify-content: space-between;"> <span>200</span> <span>100</span> <span>50</span> <span>m 25</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Short</span> <span>Reading Time</span> <span>Long</span> </div> <div style="display: flex; align-items: center; justify-content: space-between;"> <span>Small</span> <span>Image File Size</span> <span>Large</span> </div>
g	<p><b>Latitude:</b> Specify the dynamic range. The dynamic range that can be detected is larger with L5 than with L4. If the signals of the sample are in the L4 range, the density gradation is represented more finely if L4 is selected.</p>

Part	Function												
h	<p><b>Sampling Area:</b> Drag and select the scanning area on the Phosphor stage.</p> <p>The different modes on the Sampling Area are selected as follows:</p> <table border="1"> <thead> <tr> <th>Mode</th> <th>Function</th> <th>Mode</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>Grid</td> <td>Select this to specify the reading area based on the 2.5 cm grid lines on the Phosphor stage.</td> <td>20 x 25</td> <td>Select this to specify a reading area of 20 cm x 25 cm.</td> </tr> <tr> <td>Free</td> <td>Select this to specify the reading area arbitrarily.</td> <td>20 x 40</td> <td>Select this to specify a reading area of 20 cm x 40 cm.</td> </tr> </tbody> </table>	Mode	Function	Mode	Function	Grid	Select this to specify the reading area based on the 2.5 cm grid lines on the Phosphor stage.	20 x 25	Select this to specify a reading area of 20 cm x 25 cm.	Free	Select this to specify the reading area arbitrarily.	20 x 40	Select this to specify a reading area of 20 cm x 40 cm.
Mode	Function	Mode	Function										
Grid	Select this to specify the reading area based on the 2.5 cm grid lines on the Phosphor stage.	20 x 25	Select this to specify a reading area of 20 cm x 25 cm.										
Free	Select this to specify the reading area arbitrarily.	20 x 40	Select this to specify a reading area of 20 cm x 40 cm.										

- 3 Use **Save Condition** button when saving the reading conditions in a file. You may save reading conditions that are used frequently with this function and recall them later with **Load Condition**.  
Use **Load Condition** button when recalling reading conditions saved with **Save Condition**.

**Note:** When starting Typhoon FLA 7000 Control Software, the settings information from the previous session is displayed.

## 2.2 Setting the Storage phosphor screen on the Phosphor stage

Set the Storage phosphor screen on the Phosphor stage.

For instructions on setting the Storage phosphor screen, see Typhoon FLA 7000 User Manual

## 2.3 Setting the Phosphor stage on Typhoon FLA 7000

Set the Phosphor stage on Typhoon FLA 7000.

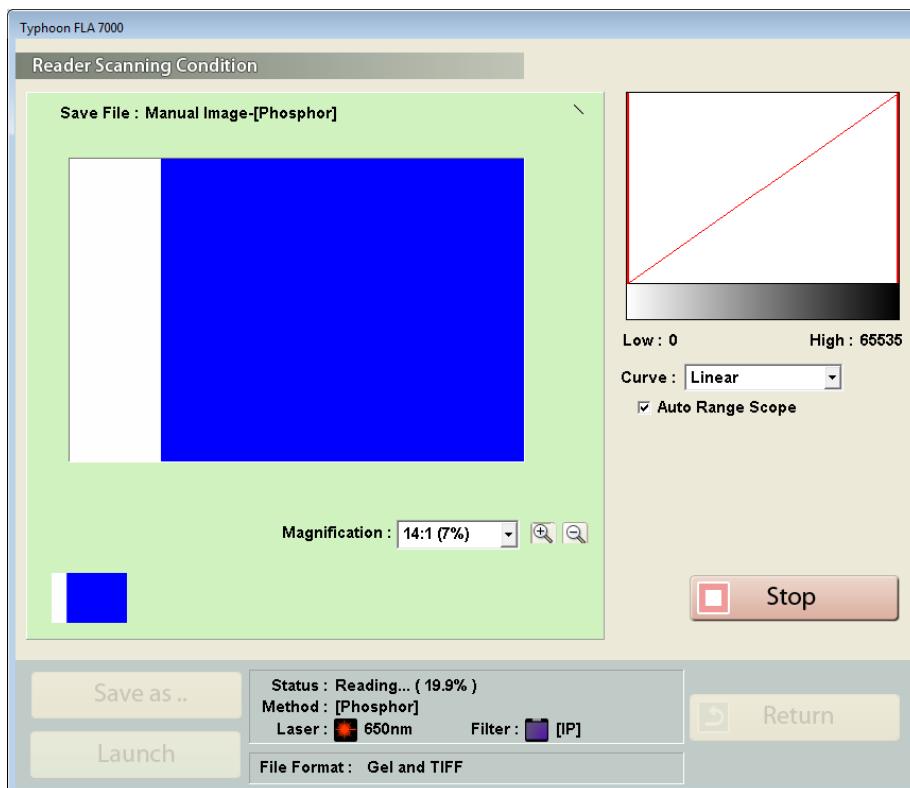
For instructions on setting the Phosphor stage on Typhoon FLA 7000, see Typhoon FLA 7000 User Manual.

## 2 Reading phosphorimaging samples

### 2.4 Starting reading

- 1 Click the **Start Scan** button on the **Reader Settings** window to start reading.

*Result:* The scanned area is displayed in the real-time window, as shown below. The stage is read from the left to the right.



**Note:** To stop reading before the scanning is completed, click the **Stop** button.

- The area that has not been read will be saved as an image with a data value of 0 (light intensity of 0)
- The reading function is cancelled. You cannot start reading again from the location where reading stopped.

- 2 When you want to change the display parameters of the real-time window, refer to the explanations below.

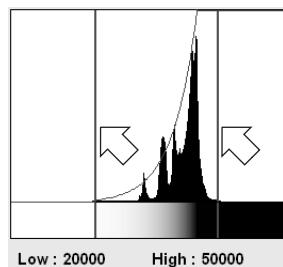


Select the type of tone curve from the pull-down menu.

**Exponential:** The exponential tone curve is used to adjust gradations.

**Linear:** The linear tone curve is used to adjust gradations.

**Sigmoid:** The sigmoid tone curve is used to adjust gradations.



Drag the adjuster.

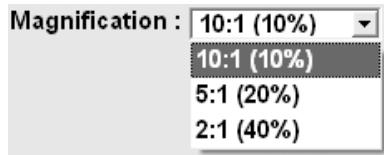
You may adjust the density of the read image.

Data of a lower light intensity than the line on the left (Low value) will be displayed as a completely white image, and data of a higher light intensity than the line on the right (High value) will be displayed as a completely black image.



If **Auto Range Scope** is checked, the Control Software automatically optimizes the tone.

**Note:** The Control Software converts data read from samples to images that have an information of 65536 tones, with 0 being the value for white, and 65535 being the value for black.



You may change the display area by selecting a magnification ratio from the pull-down menu. In addition, after reading is complete, you can click the zoom in and zoom out button and then click in the display area, to enlarge or reduce the magnification.

- 3 Click **Save as** to save data with a different file name.  
Click **Launch** to display the image using the registered analyzing software.
- 4 To read a second Storage phosphor screen continuously, follow the above procedures.  
Click the **Return** button to return to the first **Reader Settings** window.  
Do not open the stage door of Typhoon FLA 7000 until the stage has completely returned. If it is opened, close it immediately.  
When scanning finishes, the **Save as** and **Launch** buttons become active, but the **Return** button is grayed out until the stage has completely returned.
- 5 Finish reading.  
Before turning off the power of Typhoon FLA 7000, shut down the Control Software.

**Note:**

If the photo-multipliers (PMT) are replaced with a multi-alkali PMT, the Phosphorimaging mode switches from that of the regular Phosphorimaging mode to a PMT voltage adjustment mode. The PMT voltage adjustment mode differs from the regular Phosphorimaging mode in that a sensitivity level that matches the scanned sample can be set independently. Replacement of the standard PMT with a multi-alkali PMT is done by a serviceman. For details, contact an authorized dealer.

The Sensitivity settings differ from that of the regular Phosphorimaging mode. The operation procedures for other settings are the same as those of the regular Phosphorimaging mode. Follow the operation procedures of the regular Phosphorimaging mode.

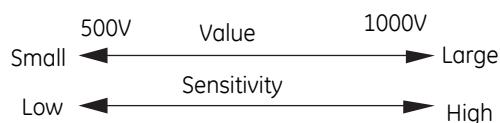
*Phosphorimaging mode*

Sensitivity	Pixel Size	Latitude
<input type="radio"/> S10000	<input type="radio"/> 25 µm	<input checked="" type="radio"/> L4
<input checked="" type="radio"/> S4000	<input checked="" type="radio"/> 50 µm	<input type="radio"/> L5
<input type="radio"/> S1000	<input type="radio"/> 100 µm	
	<input type="radio"/> 200 µm	

*PMT voltage adjustment mode*

PMT	Pixel Size	Latitude
<input type="text" value="500"/> V (500-1000)	<input type="radio"/> 25 µm	<input checked="" type="radio"/> L4
	<input checked="" type="radio"/> 50 µm	<input type="radio"/> L5
	<input type="radio"/> 100 µm	
	<input type="radio"/> 200 µm	

You may set the voltage to be applied to the PMT as an integral value within the predetermined range. The larger the value is, the higher the sensitivity, but noise will be greater.

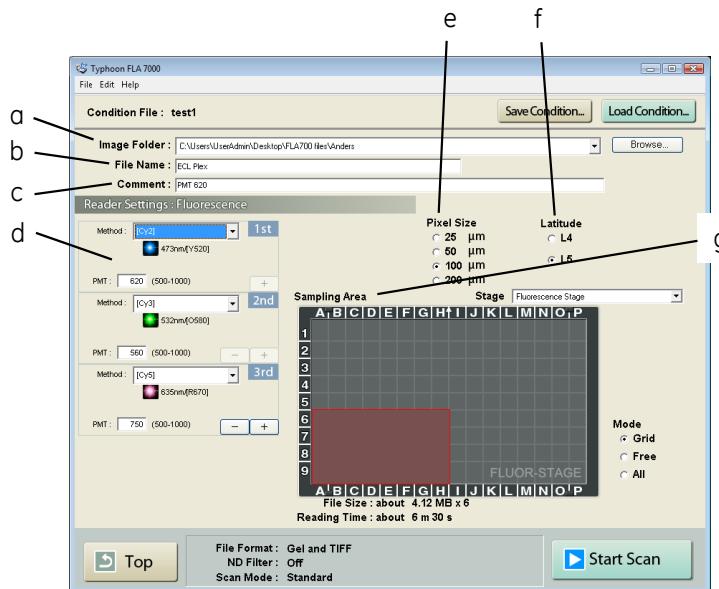


# 3 Reading fluorescent samples

## 3.1 Setting the reading conditions

- 1 Click the **Fluorescence** button.

The **Reader Settings** window for the Fluorescence mode is displayed.



Click **Top** to return to the main window from the Fluorescence mode.

- 2 Make these settings before reading fluorescent samples.

Refer to the following explanations of reading conditions when making settings.

- Image Folder:** Click the **Browse** button and specify where to save the file after reading.

**Note:** When scanning multiple times, the image data are saved in the folder with the name specified in **File Name**, which is automatically created in the specified location.

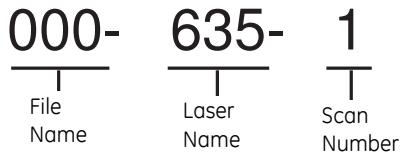
- File Name:** Enter the name of a file for saving image data.

**Note:** You cannot start reading unless you enter a file name.

### 3 Reading fluorescent samples

#### 3.1 Setting the reading conditions

**Note:** When the number of scans is between two and four, the laser name and scan number are automatically added to the specified name.



If reading is set with the 635 nm laser, 473 nm laser, 635 nm laser, and 635 nm laser, with "test" as the file name, then the following files are created in the "test" folder.

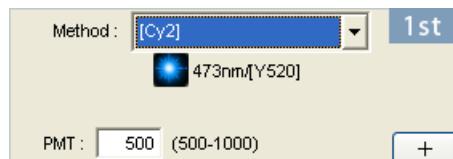
test-635-1

test-473

test-635-2

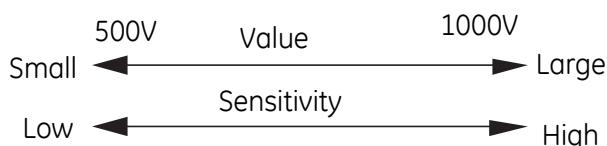
test-635-3

- c **Comment:** Enter a comment (optional). The comment is saved with the image as a file, and can be viewed with the analyzing software.
- d Scanning **Method** and **PMT**



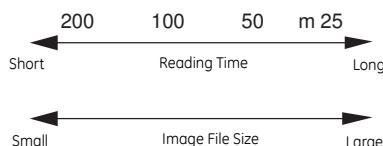
Scanning can be performed up to four times.  
**Method** and **PMT** are set for each scanning.

Part	Description
	From the pull-down menu, select the <b>Method</b> that corresponds with the sample. The selected laser and filter combination is displayed below.
	You may set the voltage to be applied to the photo-multiplier tube (PMT) as an integral value within the predetermined range. The larger the value is, the higher the sensitivity.



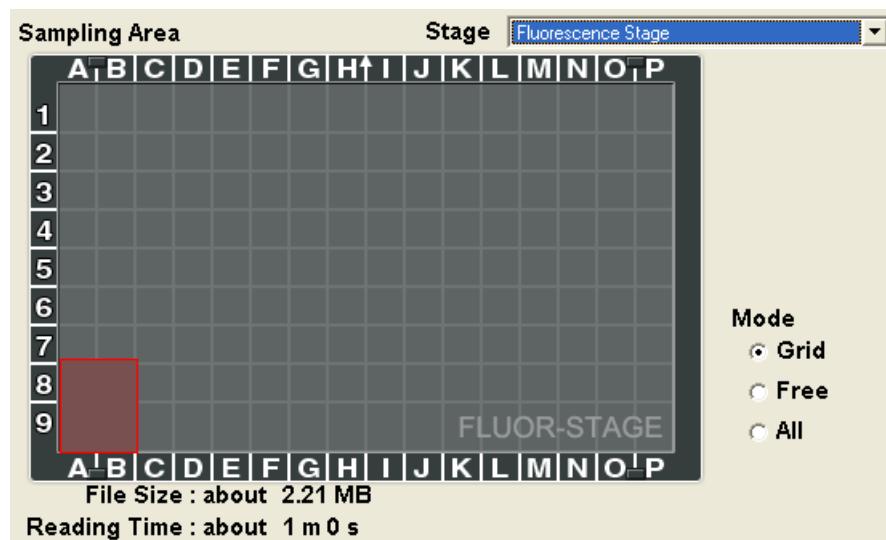
Part	Description
	Click the + button to increase the number of scans, and click the - button to reduce the number of scans. Up to four scans can be performed.

e **Pixel Size:** Set the pixel size for reading. Click to select from one of the four types, as shown on the left. A sample with a smaller pixel size is analyzed more finely.



f **Latitude:** Specify the dynamic range. The dynamic range that can be detected is larger with L5 than with L4. If the signals of the sample are in the L4 range, the density gradation is represented more finely if L4 is selected.

g Drag and select the scanning area on the Fluor stage.



Item	Function
<b>Grid</b> mode	Select <b>Grid</b> mode to specify the reading area based on the 2.5 cm grid lines on the Fluor stage.
<b>Free</b> mode	Select <b>Free</b> mode to arbitrarily specify the reading area.
<b>All</b> mode	Select <b>All</b> mode to specify the entire Fluor stage as the reading area.
<b>Reading Time</b>	Displays estimated time until reading finishes.
<b>File size</b>	Displays size of the file. Expressed as file size per test x number of scans.

### 3 Reading fluorescent samples

#### 3.1 Setting the reading conditions

##### When you use the Multi stage (optional accessory)

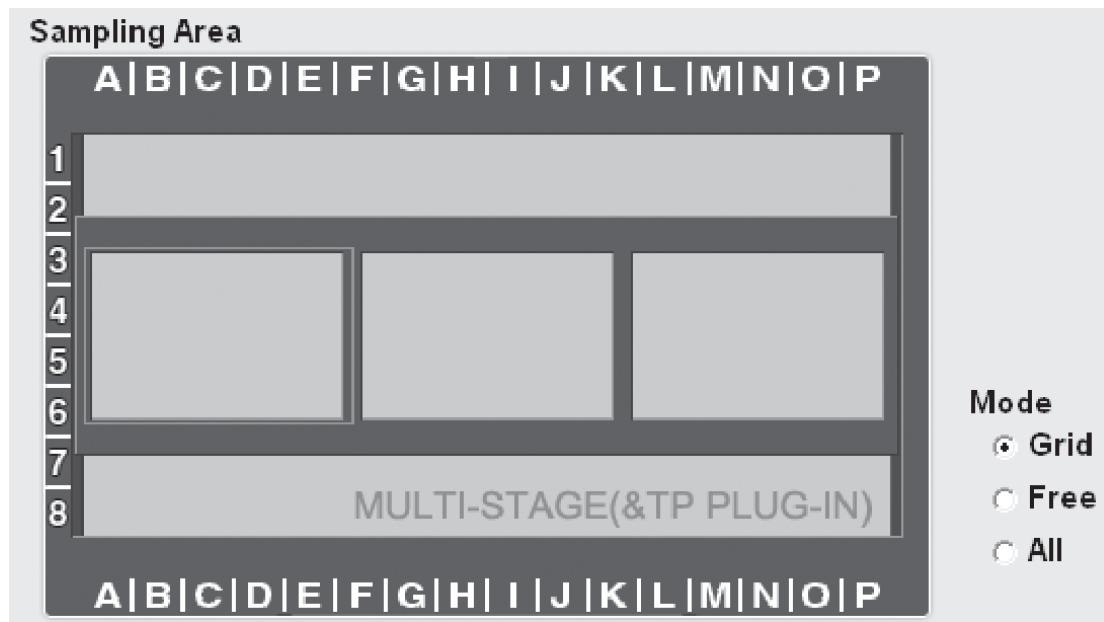
When the gel with the glass and the titer plate sample are read by using the Multi stage and TP plugin, change Stage type in the pull-down list.

##### Display of Multi stage



Drag and select the scanning area on the Multi stage.

##### Display of Multi stage (and TP plugin)



Select the scanning area on the shape of titer plate.

- 3 Reuse reading conditions: Use the **Save Condition** button when saving the reading conditions in a file. You may save reading conditions that are used frequently with this function and recall them later with the **Load Condition** button.

**Note:** When starting the Typhoon FLA 7000 Control Software, the settings information from the previous session is displayed.

## 3.2 Setting a fluorescent sample on the Fluor or Multi stage

Set the fluorescent sample on the Fluor or Multi stage.

For instructions on setting the fluorescent sample, see Typhoon FLA 7000 User Manual.

## 3.3 Setting the Fluor or Multi stage on Typhoon FLA 7000

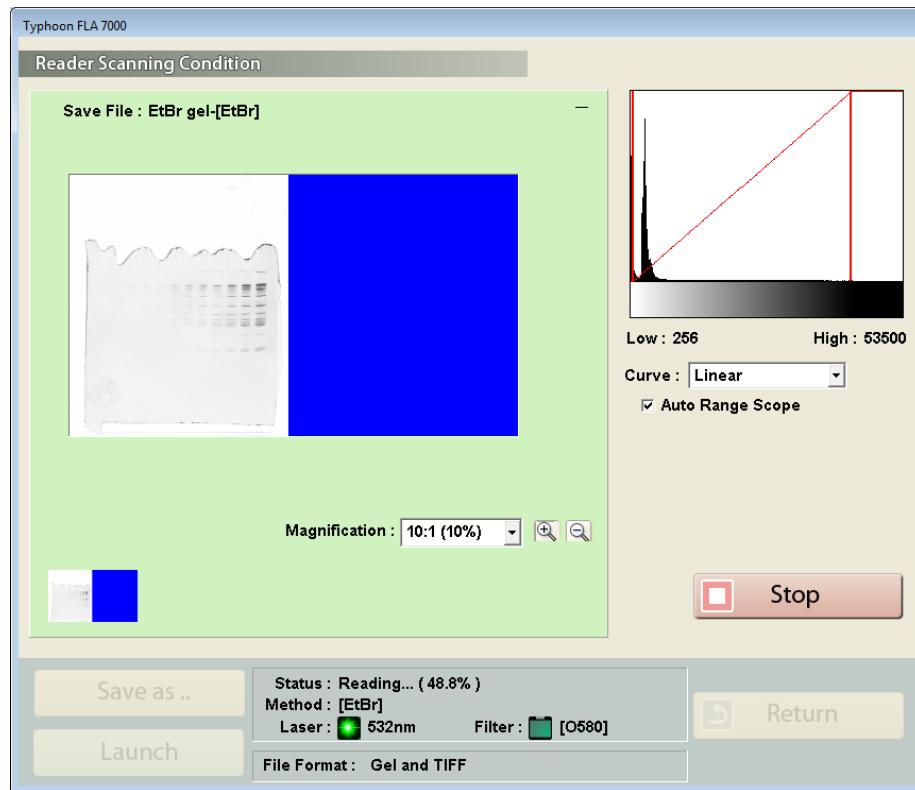
Set the Fluor or Multi stage on Typhoon FLA 7000.

For instructions on setting the Fluor or Multi stage, see Typhoon FLA 7000 User Manual.

## 3.4 Starting reading

- 1 Click the **Start Scan** button on the **Reader Settings** window to start reading.

*Result:* The scanned area is displayed in the real-time window, as shown below. The stage is read from the left to the right.



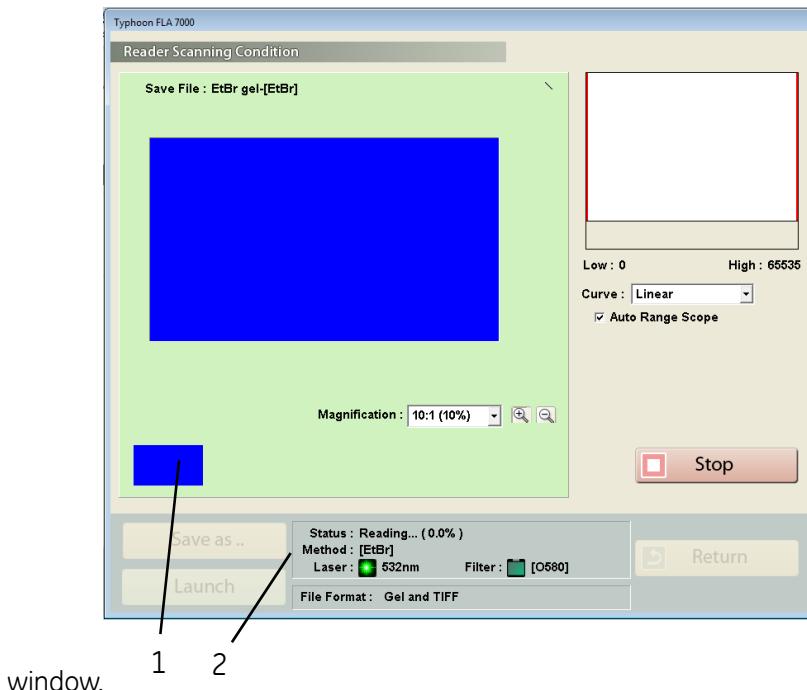
### 3 Reading fluorescent samples

#### 3.4 Starting reading

**Note:** To stop reading before the scanning is completed, click the **Stop** button.

- The area that has not been read will be saved as an image with a data value of 0 (light intensity of 0)
- The reading function is cancelled. You cannot start reading again from the location where reading stopped.

2 View information about the scan in the lower part of the



window.

No.	Function
1	Displays the scan results of the 1st, 2nd, 3rd, and 4th scan, starting from the left. Click on the tabs to switch the display.
2	Displays information related to the contents of the currently displayed scan.

3 When you want to change the display parameters of the real-time window, refer to the explanations below and make settings.

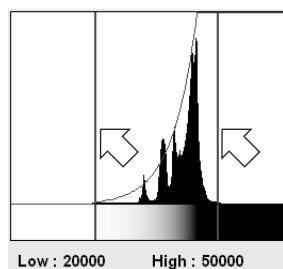


Select the type of tone curve from the pull-down menu.

**Exponential:** The exponential tone curve is used to adjust gradations.

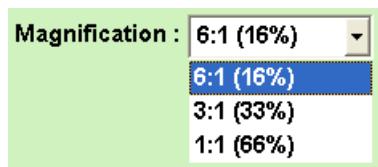
**Linear:** The linear tone curve is used to adjust gradations.

**Sigmoid:** The sigmoid tone curve is used to adjust gradations.



### Auto Range Scope

**Note:** The Typhoon FLA 7000 Control Software converts data read from samples to images that have an information of 65536 tones, with 0 being the value for white, and 65535 being the value for black.



Drag the adjuster.

You may adjust the density of the read image.

Data of a lower light intensity than the line on the left (Low value) will be displayed as a completely white image, and data of a higher light intensity than the line on the right (High value) will be displayed as a completely black image.

If **Auto Range Scope** is checked, the Typhoon FLA 7000 Control Software automatically optimizes the tone.

You may change the display area by selecting a magnification ratio from the pull-down menu. In addition, after reading is complete, you can click the zoom in and zoom out button and then click in the display area, to enlarge or reduce the magnification.

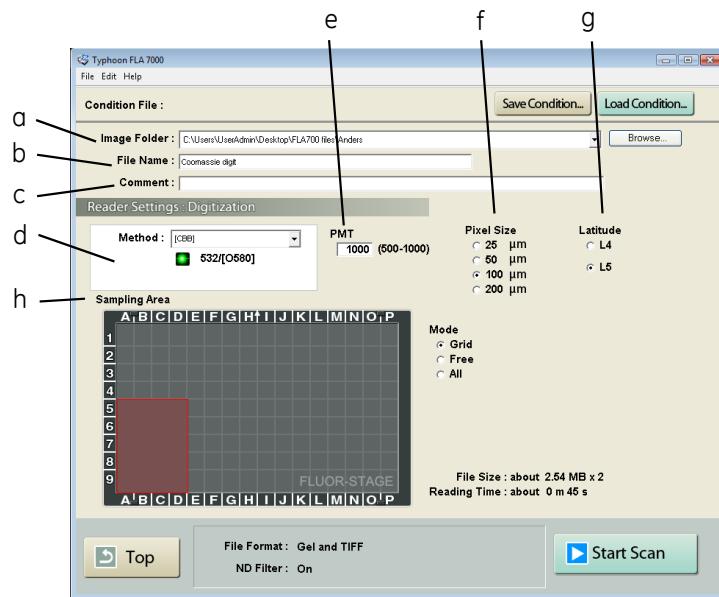
- 4 Click **Save as** to save the data with a different file name.  
Click **Launch** to launch the registered analyzing software to display the image.
- 5 To read another fluorescent sample continuously, carry out reading by following the above procedures.  
Click the **Return** button to return to the first **Reader Settings** window.  
Do not open the stage door of Typhoon FLA 7000 until the stage has completely returned. If it is opened, close it immediately.  
When scanning finishes, the **Save as..** and **Launch** buttons become active, but the **Return** button is grayed out until the stage has completely returned.
- 6 Finish reading.  
Before turning off the power of Typhoon FLA 7000, shut down the Typhoon FLA 7000 Control Software.

# 4 Reading digitization samples

## 4.1 Setting the reading conditions

- 1 Click the **Digitization** button.

The **Reader Settings** window for the Digitization mode is displayed.

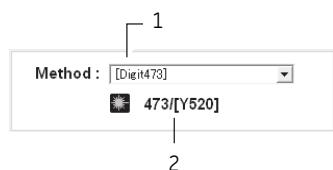


Click **Top** to return to the main window from the **Digitization** mode.

- 2 Make these settings before reading digitization samples.

Refer to the following explanations of reading conditions when making settings.

- a **Image Folder:** Specify where to save the file after reading.  
Click the **Browse** button and specify where to save the file after reading.
- b **File Name:** Enter the name of a file for saving image data.  
**Note:** You cannot start reading unless you enter a file name.
- c **Comment:** Enter a comment (optional). The comment is saved with the image as a file, and can be viewed with the analyzing software.
- d **Method:** Select the method from the pull-down menu that corresponds with the sample .



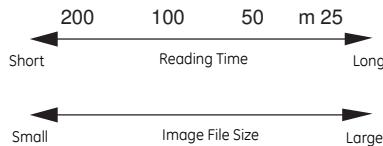
No.	Function
1	The <b>Method</b> to be used for reading is displayed.
2	The contents of the laser and filter combination to be used for reading are displayed.

**Note:** To use the **Digitization** mode, the 473 nm laser must be selected and the Y520 filter must be registered, or the SHG 532 nm laser must be selected and the O580 filter must be registered. If these conditions are not fulfilled, the Reader Condition Settings window for the Digitization mode cannot be accessed.

- e **PMT:** You may set the voltage to be applied to the photo-multipliers (PMT) as an integral value within the predetermined range.



- f **Pixel Size:** Set the pixel size for reading. Click to select from one of the four types, as shown on the left. A sample with a smaller pixel size is analyzed more finely.



- g **Latitude:** Specify the dynamic range. The dynamic range that can be detected is larger with L5 than with L4. If the signals of the sample are in the L4 range, the density gradation is represented more finely if L4 is selected.

## 4 Reading digitization samples

### 4.1 Setting the reading conditions

h Drag and select the scanning area on the Fluor stage.



Name	Function
<b>Grid</b> mode	Select <b>Grid</b> mode to specify the reading area based on the 2.5 cm grid lines on the Fluor stage.
<b>Free</b> mode	Select <b>Free</b> mode to arbitrarily specify the reading area.
<b>All</b> mode	Select <b>All</b> mode to specify the entire Fluor stage as the reading area.
<b>Reading Time</b>	Displays estimated time until reading finishes.
<b>File size</b>	Displays size of the file. Expressed as file size per test x number of scans.

Use the **Save Condition** button to save the reading conditions in a file. You may save reading conditions that are used frequently with this function and recall them later with **Load Condition**.

**Note:** When starting the Typhoon FLA 7000 Control Software, the settings information from the previous session is displayed.

## 4.2 Setting a digitization sample on the Fluor stage

After setting the digitization sample on the Fluor stage, place the fluorescent plate for digitization on top of it.

For instructions on setting the digitization sample, see Typhoon FLA 7000 User Manual.

## 4.3 Setting the Fluor stage on Typhoon FLA 7000

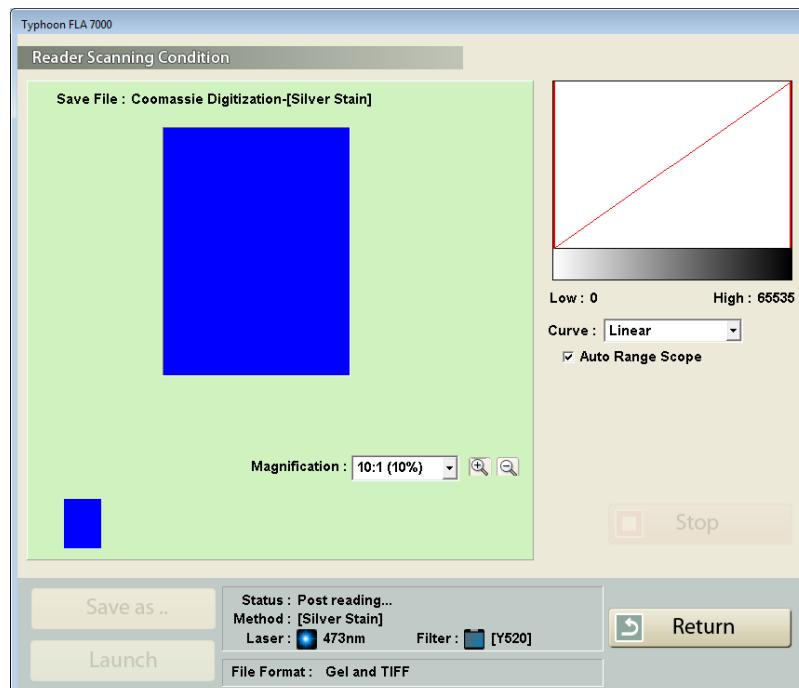
Set the Fluor stage on Typhoon FLA 7000.

For instructions on setting the Fluor stage on Typhoon FLA 7000, see Typhoon FLA 7000 User Manual.

## 4.4 Starting reading

- 1 Click the **Start Scan** button on the **Reader Settings** window to start reading.

*Result:* The scanned area is displayed in the real-time window, as shown below. The stage is read from the left to the right.



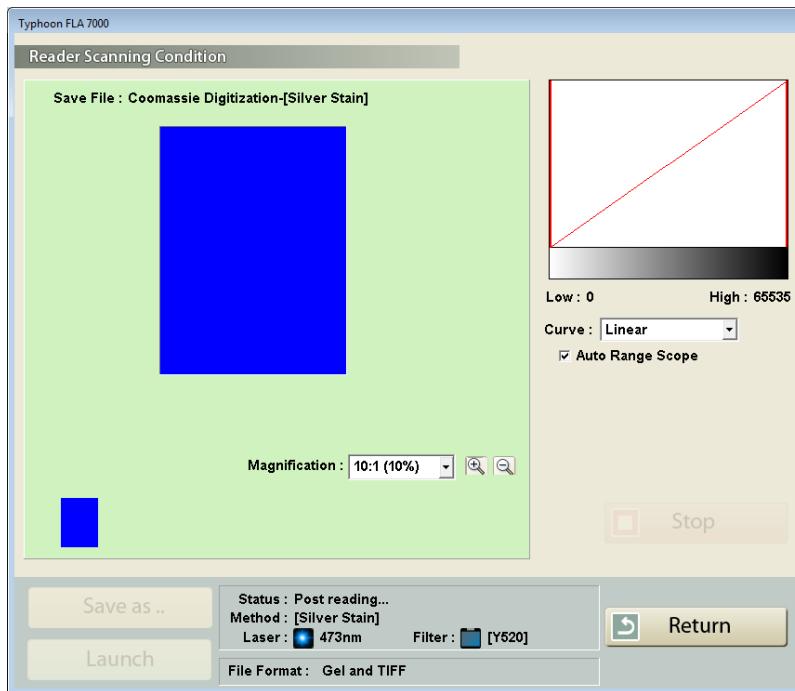
**Note:** To stop reading before the scanning is completed, click the **Stop** button.

- The area that has not been read will be saved as an image with a data value of 0 (light intensity of 0)
- The reading function is cancelled. You cannot start reading again from the location where reading stopped.

## 4 Reading digitization samples

### 4.4 Starting reading

- 2 Click the **Start Scan** button to start reading.



The scanned area is displayed in the real-time window, as shown below.

The stage is read from the left to the right.

- 3 When you want to change the display parameters of the real-time window, refer to the explanations below and make settings.

The Typhoon FLA 7000 Control Software converts data read from samples to images that have an information of 65536 tones, with 0 being the value for white, and 65535 being the value for black. The tones are indicated by the horizontal axis of the tone curve graph.

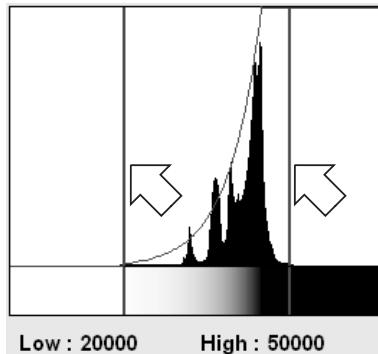


Select the type of tone curve from the pull-down menu.

**Exponential:** The exponential tone curve is used to adjust gradations.

**Linear:** The linear tone curve is used to adjust gradations.

**Sigmoid:** The sigmoid tone curve is used to adjust gradations.



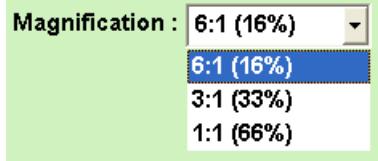
Drag the adjuster.

You may adjust the density of the read image.

Data that are lighter than the line on the left (Low value) will be displayed as a completely white image, and data that are darker than the line on the right (High value) will be displayed as a completely black image.

**Auto Range Scope**

If **Auto Range Scope** is checked, the Typhoon FLA 7000 Control Software automatically corrects the optimal tone.



You may change the display area by selecting a magnification ratio from the pull-down menu. In addition, after reading is complete, you can click the zoom in and zoom out button and then click in the display area, to enlarge or reduce the magnification.

- 4 Click **Save as** to save the data with a different file name.  
Click **Launch** to launch the registered analyzing software to display the image.
- 5 To read another digitization sample continuously, follow the above procedures.  
Click the **Return** button to return to the first Reader Settings window.  
Do not open the stage door of Typhoon FLA 7000 until the stage has completely returned. If it is opened, close it immediately.
- 6 When scanning finishes, the **Save as..** and **Launch** buttons become active, but the **Return** button is grayed out until the stage has completely returned.
- 7 Finish reading.  
Before turning off the power of Typhoon FLA 7000, shut down the Typhoon FLA 7000 Control Software.

# 5 Lasers and filters, other settings

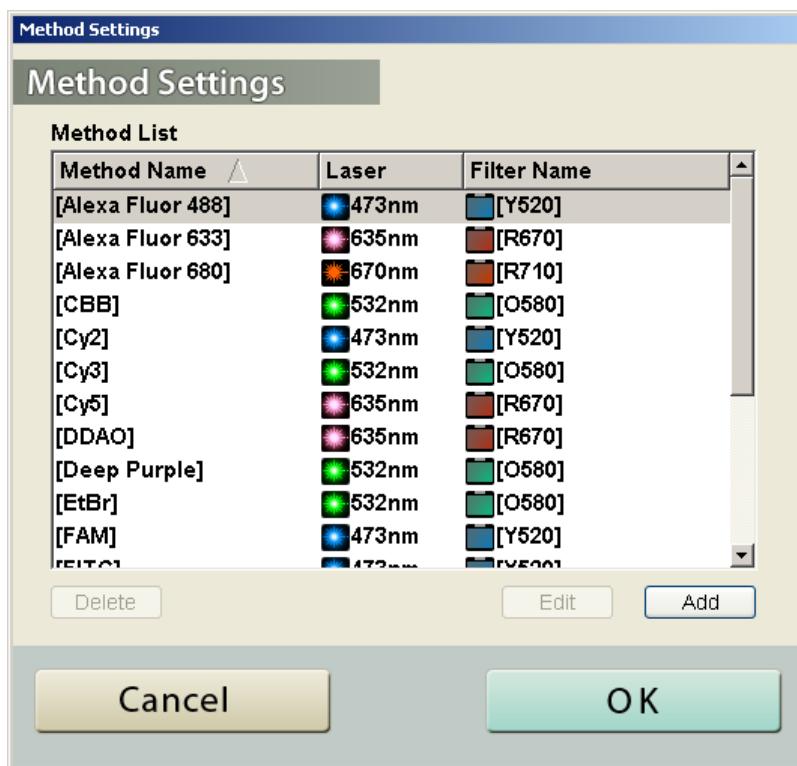
## 5.1 Registering laser and filter combinations

**Note:** Method settings are registered by a serviceman upon installation. Under normal circumstances, it is not necessary to register these settings.

You may register, change, and delete laser and filter combinations, as described below.

- 1 Click the **Method** button on the main window.

The **Method Settings** dialog box appears.



Item	Function	Item	Function
<b>Method Name</b>	Names of the registered laser and filter combinations	<b>Laser and Filter Name</b>	Registered laser and filter combinations
<b>Edit</b> button	Click this button to edit laser and filter combinations	<b>Cancel</b> button	Click this button to delete laser and filter combinations
<b>Add</b> button	Click this button to register new laser and filter combinations		

2 Click the **Add** button.

The following dialog box appears.



#### Name

Enter a name for the combination to be registered.

#### Laser

Select the type of laser. You may also select lasers that are not actually loaded.

#### Filter

Select the type of filter. You may also select lasers that are not actually loaded.

**Note:** Combinations of lasers and filters that are not loaded cannot be selected in the **Reader Condition** screen.

3 Enter a name for the combination, select the type of laser and filter, and click the **OK** button. The laser and filter combination is registered.

**Note:** Click the **Delete** and **Edit** buttons to delete or change a registered Method.

Methods initially registered as default cannot be deleted or edited. The Methods marked with [\*\*] are the Methods that initially were set as default.

4 Click the **OK** button.

## 5.2 Filter module settings

### 5.2.1 Registering filters

Filter module settings are registered by a serviceman upon installation. Under normal circumstances, it is not necessary to register these settings.

After exchanging the filters of Typhoon FLA 7000, you must register the exchanged filters in the Control Software.

**Note:** Newly installed filters must be registered in the Control Software, or they will not be displayed in the Control Software window.

The following explains the method for registering filters in the Control Software when the [Y520] is set in filter module position No. 2 (second from last).



#### CAUTION

When removing the filter module, make sure to press the **Filter Module** button and remove it after the window changes to the Filter Settings window.

If the filter module is removed with force, the area where the filter comes in contact with the photo-multipliers (PMT) will be damaged.

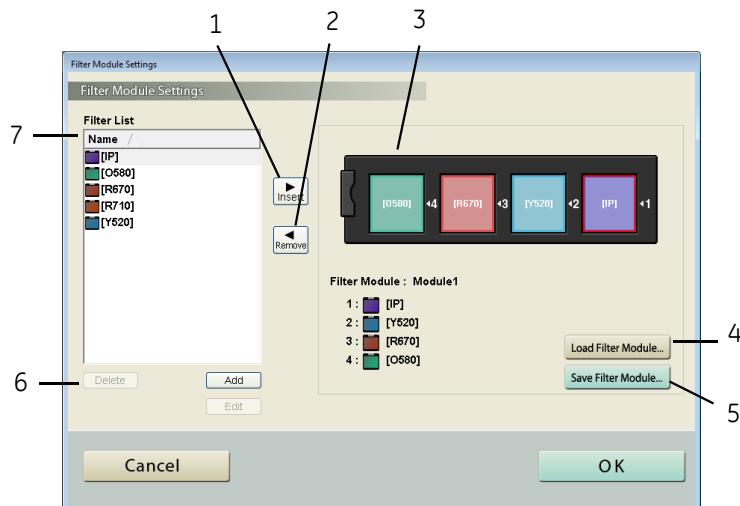
## 5 Lasers and filters, other settings

### 5.2 Filter module settings

#### 5.2.1 Registering filters

- 1 Click the **Filter Module** button on the main window.

The following window appears and the filter module moves to a position where it can be taken out.



No.	Function	No.	Function
1	Click the <b>Insert</b> button to set a filter in the software. It is also possible to use the mouse to drag-and-drop.	5	Click the <b>Save Filter Module</b> button to save filter combinations as a file.
2	Click the <b>Remove</b> button to remove a filter in the software.	6	<ul style="list-style-type: none"> <li>Click the <b>Add</b> button to register a new filter.</li> <li>Click the <b>Edit</b> button to change the name or color of the displayed icon for the registered filter. Default filters ([**]) cannot be edited.</li> <li>Click the <b>Delete</b> button to delete a registered filter. Default filters ([**]) cannot be deleted.</li> </ul>
3	Corresponds to the numbers (4, 3, 2, 1) on the filter tray.	7	List of filters currently registered in the software. Filters marked with [**] are the filters that are initially set as default.
4	Click the <b>Load Filter Module</b> button to load saved filter combinations		

- 2 Exchange the filter of Typhoon FLA 7000.

For instructions on exchanging the filter, see Typhoon FLA 7000 User Manual.

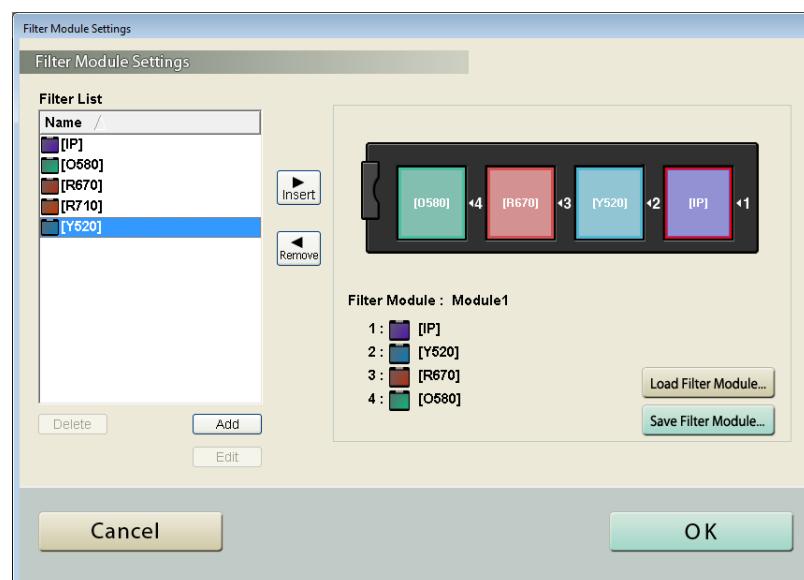
3 Click filter position No. 2.

A red frame appears around the selected filter position.



4 Select **[Y520]** from the *Filter List*.

The selected item is highlighted in blue.

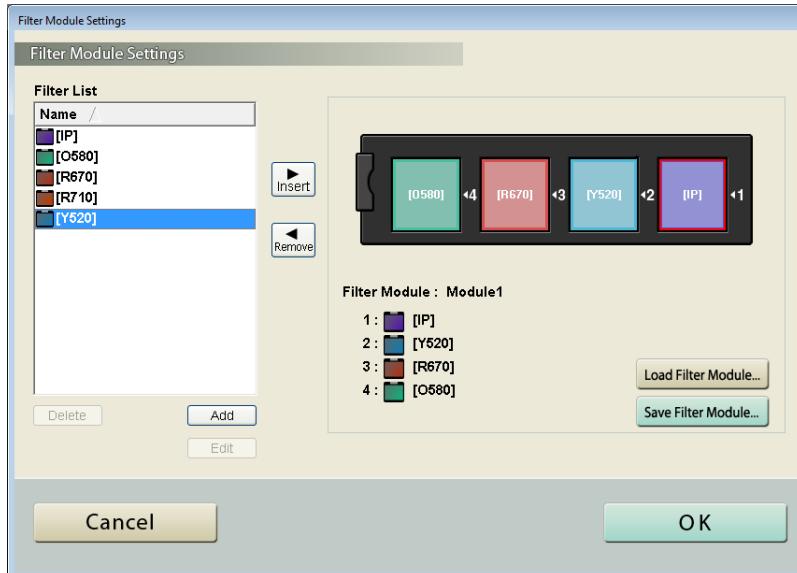


## 5 Lasers and filters, other settings

### 5.2 Filter module settings

#### 5.2.1 Registering filters

- 5 Click the **Insert** button.



It is also possible to drag-and-drop the selected filter to filter position No. 2.  
Filter position No. 2 changes to [Y520].



- 6 Click the **OK** button to save the selection.

### 5.2.2 Saving filter combinations

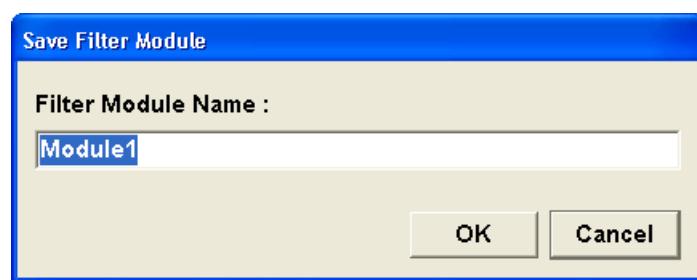
You may save the filter combination that is currently displayed.

**Note:** Exchanging the module and saving/recalling filter combinations can be managed more easily if each user has their own filter module.

- 1 Click the **Filter Module** button on the main window.

- 2 Click the **Save Filter Module** button.

The following dialog box appears.

**Filter Module Name:**

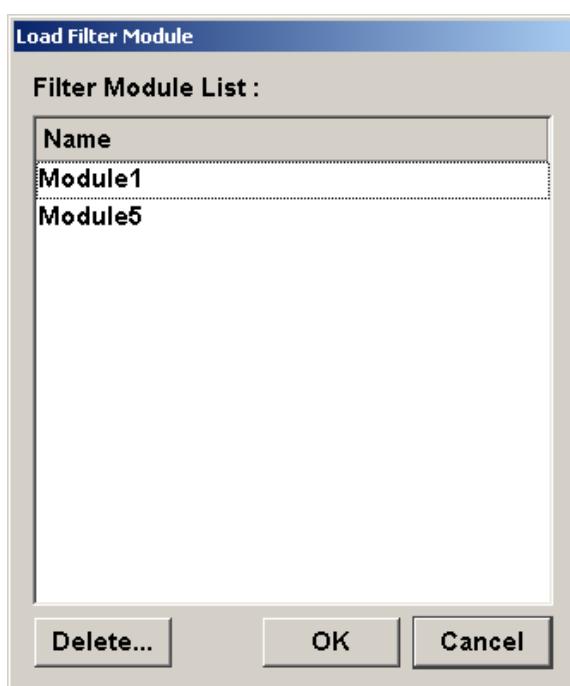
Enter a name for the filter combination.

- 3 After entering a name for the filter combination, click the **OK** button.  
The filter combination is saved.
- 4 Click the **OK** button.

### 5.2.3 Recalling filter combinations

You may recall the filter combinations that are currently registered.

- 1 Click the **Filter Module** button on the main window.
- 2 Click the **Load Filter Module** button.  
The **Load Filter Module** dialog box is displayed.



- 3 Select the name of the filter combination you want to recall, and click the **OK** button.  
The filter combination is recalled.
- 4 Click the **OK** button.

## 5 Lasers and filters, other settings

### 5.2 Filter module settings

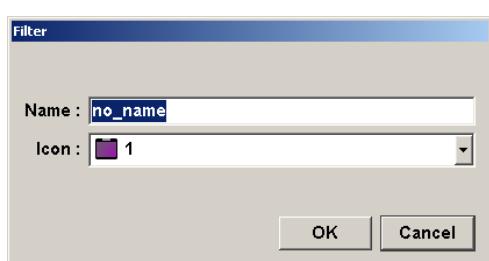
#### 5.2.4 Registering a new filter name

You may register a filter name.

1 Click the **Filter Module** button on the main window.

2 Click the **Add** button.

The following dialog box appears.



#### Name:

Enter a name for the filter.

#### Icon:

Select the color of the filter icon to be displayed in the software.

3 Select the filter name and icon color you want to register, and click the **OK** button.

The filter is registered.

4 Click the **OK** button.

#### 5.2.5 Edit a filter name or remove a filter

Registered filter name can be deleted using **Delete**, while **Remove** is used to empty a filter position in the filter module in the software.

To delete or edit the register filter name, select the filter name and click the **Delete** or **Edit** button. Methods initially registered as default cannot be deleted or edited.

Click the **Remove** button to keep the filter position empty after removing a filter.



## 5.3 Other settings

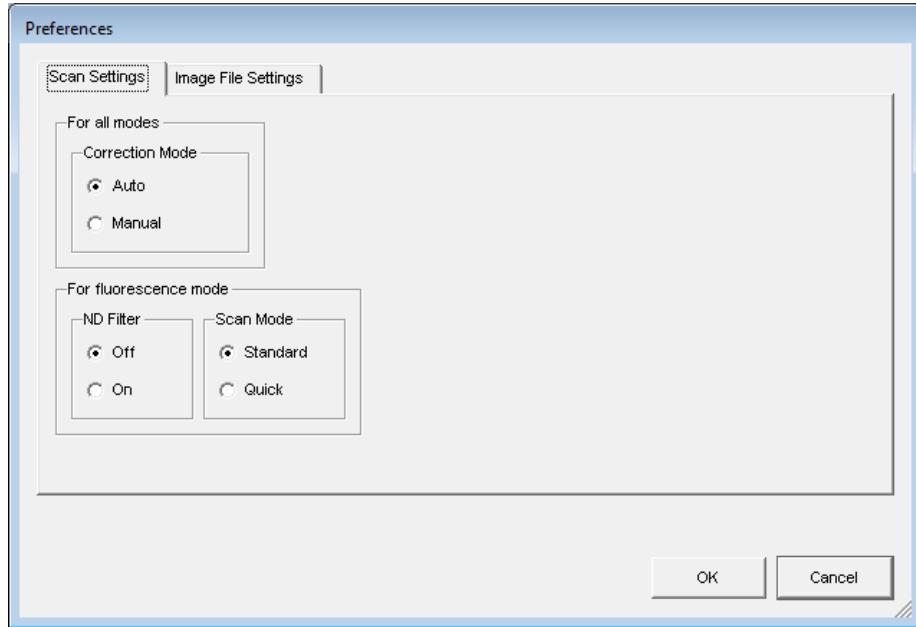
These are settings that are carried out when specifying settings for reading samples.

Depending on the reading mode, there may be some functions that cannot be used.

### 5.3.1 Settings for scanning

1 Click the **Preferences** button on the main window.

2 Click the **Scan Settings** tab.



3 For **For fluorescence mode : ND Filter** select:

Selection	Function
<b>Off</b>	Does not use ND filter for adjusting light intensity.
<b>On</b>	Uses ND filter for adjusting light intensity.

4 For **For fluorescence mode : Scan Mode** select **Standard** or **Quick**.

If **Quick** is selected, reading time will become shorter. However, the noise would stand out during reading. The reading time varies depending on the setting image size and the scanning area. When reading the whole area of the Fluor stage the reading times are as follows.

**Standard** Mode: 200 µm/210 s, 100 µm/210 s, 50 µm/330 s, 25 µm/450 s.

**Quick** Mode: 200 µm/150 s, 100 µm/150 s, 50 µm/210 s, 25 µm/330 s.

5 Click the **OK** button.

### 5.3.2 Selecting file format and analyzing software

These are settings for saving images. Depending on the scanning mode, there may be some functions that cannot be used.

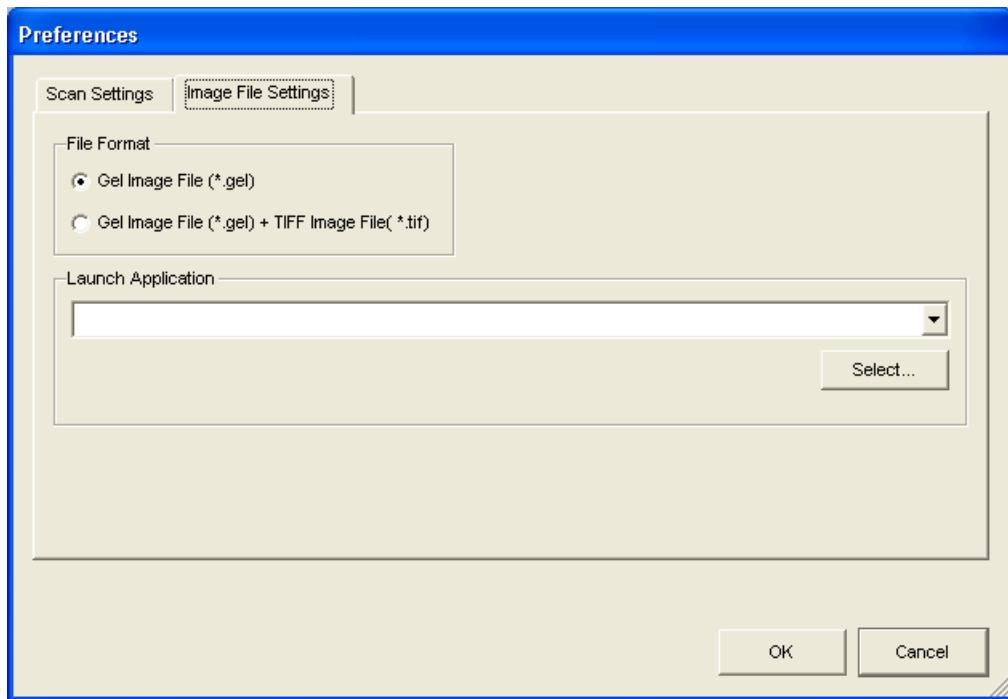
1 Click the **Preferences** button on the main window.

## 5 Lasers and filters, other settings

### 5.3 Other settings

#### 5.3.2 Selecting file format and analyzing software

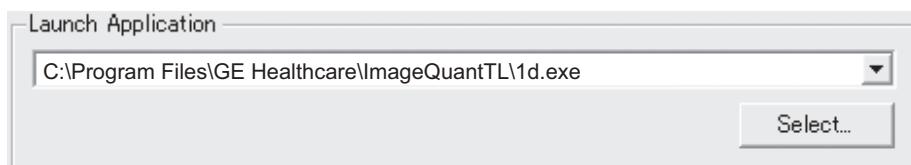
- 2 Click the **Image File Settings** tab.



- 3 For **File Format** select:

Selection	Function
Gel Image File (*.gel)	The standard file format is a .gel file which contains square root encoded pixel data.
Gel Image File (*.gel) + Tiff Image File (*.tif)	In combination with a .gel file, a read image can also be saved in TIFF file format. For TIFF files, image data type is always set to Linear format.

- 4 Click the **Select** button, and select the specified analyzing software.



# 6 Installing and uninstalling the software

## 6.1 Installation (Windows XP)

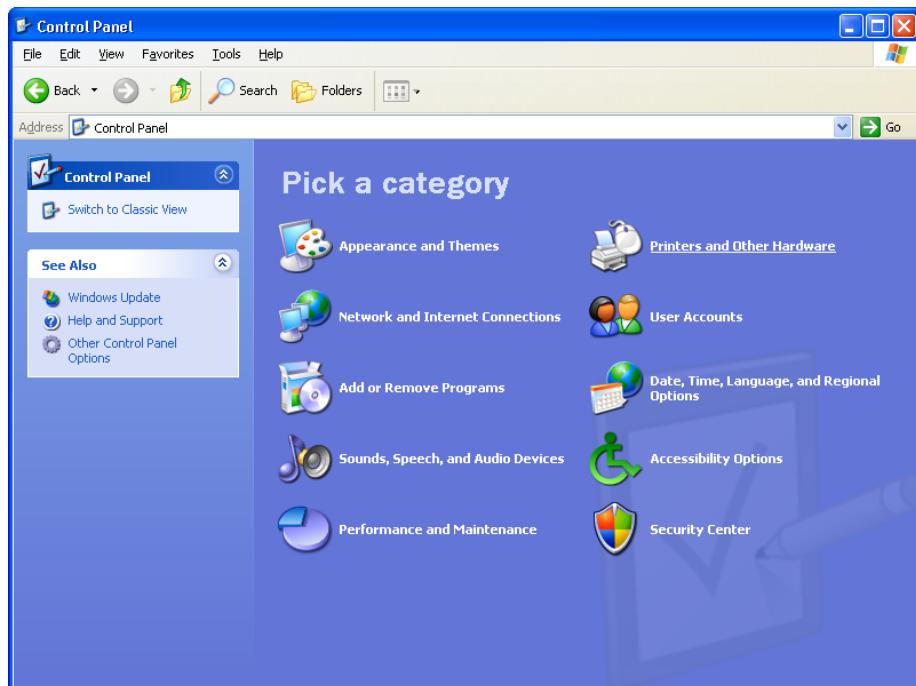
Installation is performed in the following sequence.

- 1 Installation of USB Control driver
- 2 Installation of USB Function driver
- 3 Installation of Typhoon FLA 7000 Control Software

### 6.1.1 Installation of USB Control Driver

**Note:** The computer and Typhoon FLA 7000 **must not** be connected with a USB cable during the operation.

- 1 Open the control panel and select **Printers and Other Hardware**.

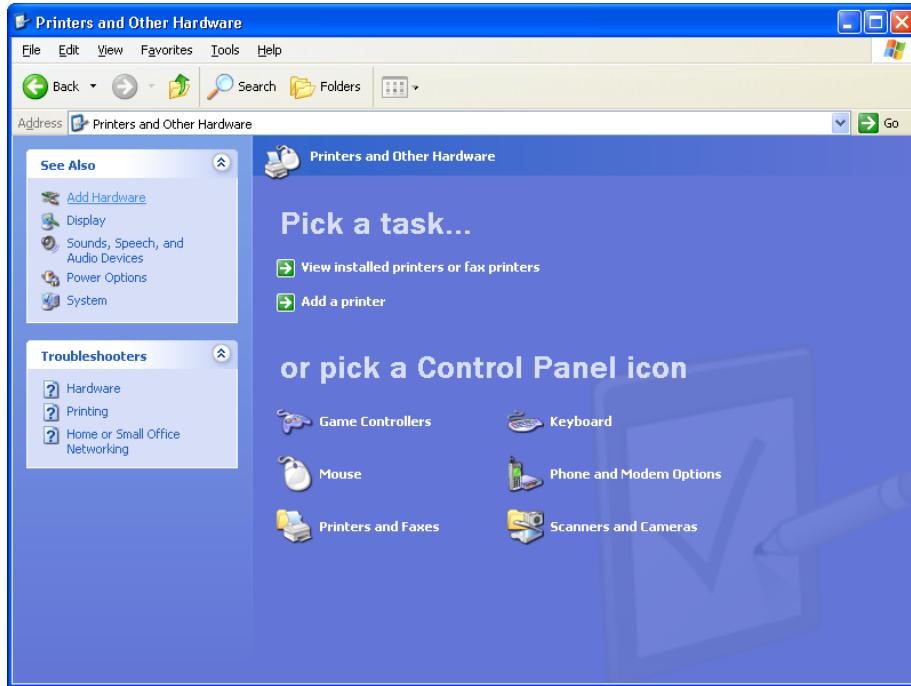


## 6 Installing and uninstalling the software

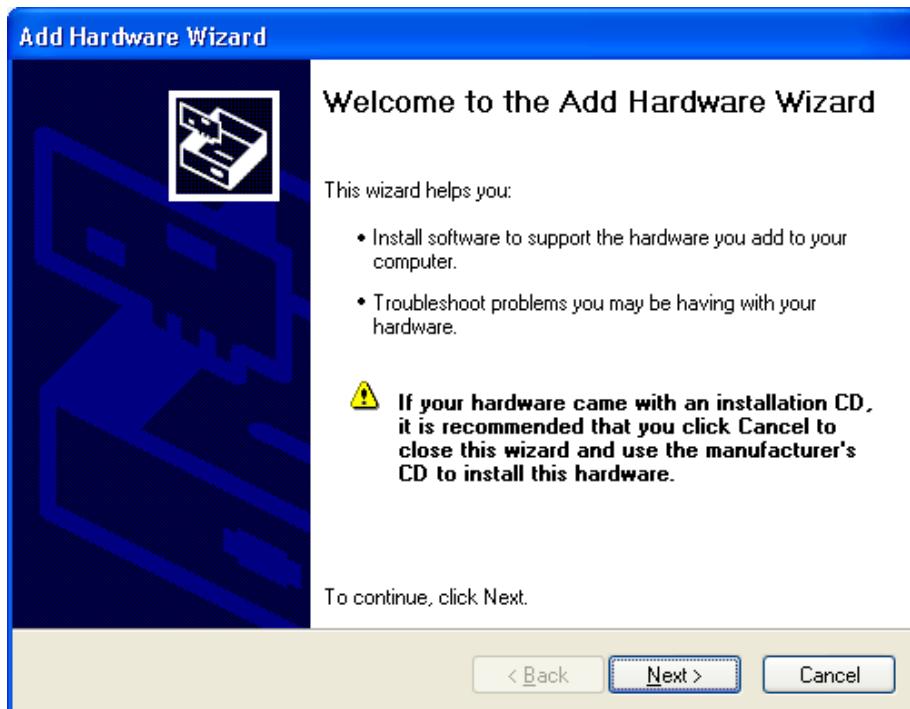
### 6.1 Installation (Windows XP)

#### 6.1.1 Installation of USB Control Driver

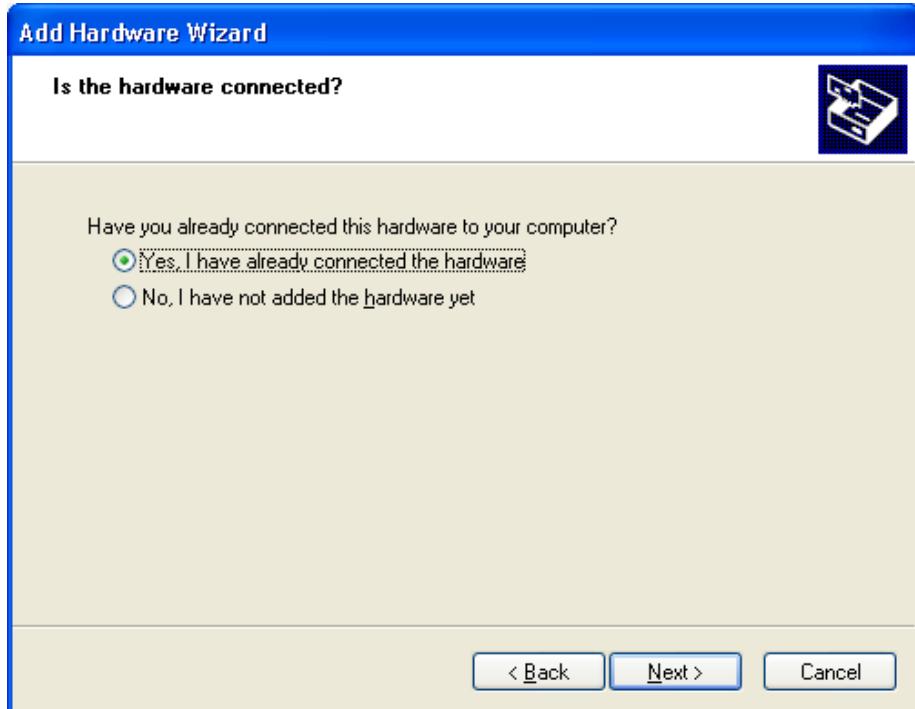
2 Click **Add Hardware**.



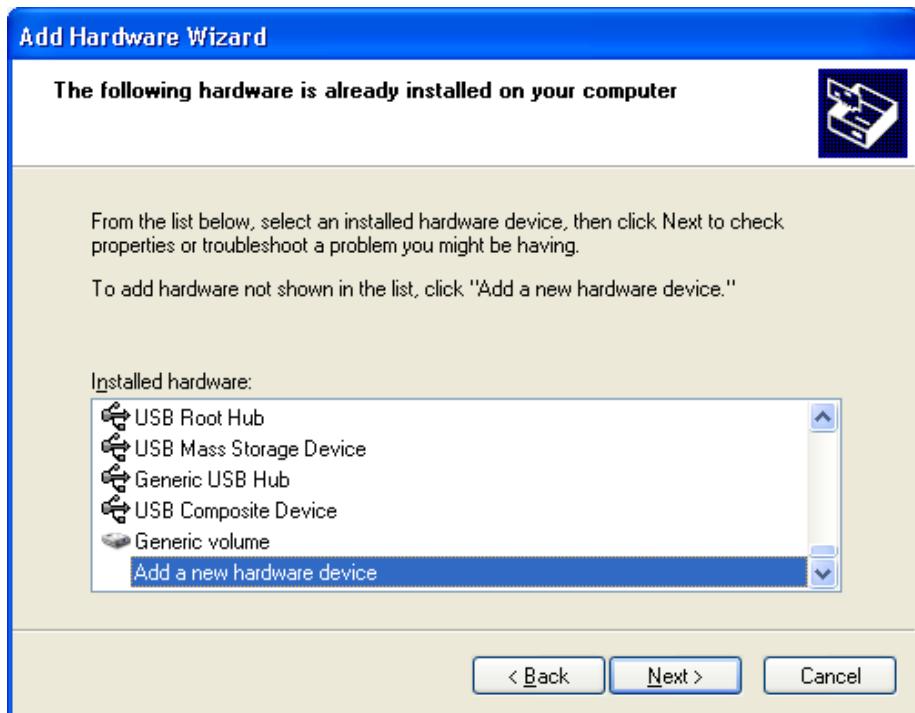
3 Click the **Next** button.



4 Select *Yes, I have already connected the hardware* and click the **Next** button.



5 Select *Add a new hardware device* and click the **Next** button.

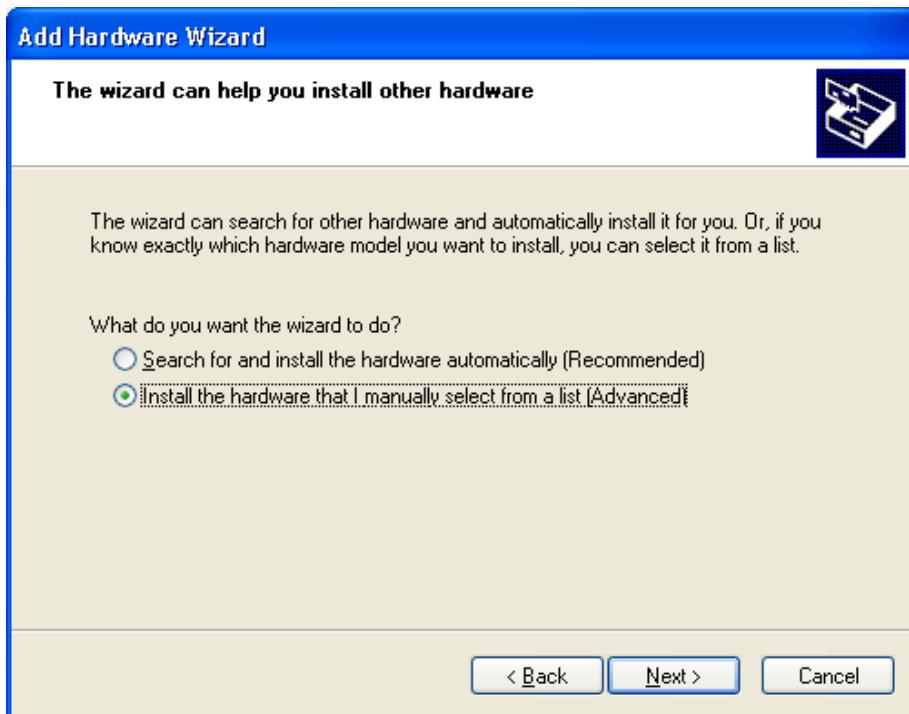


## 6 Installing and uninstalling the software

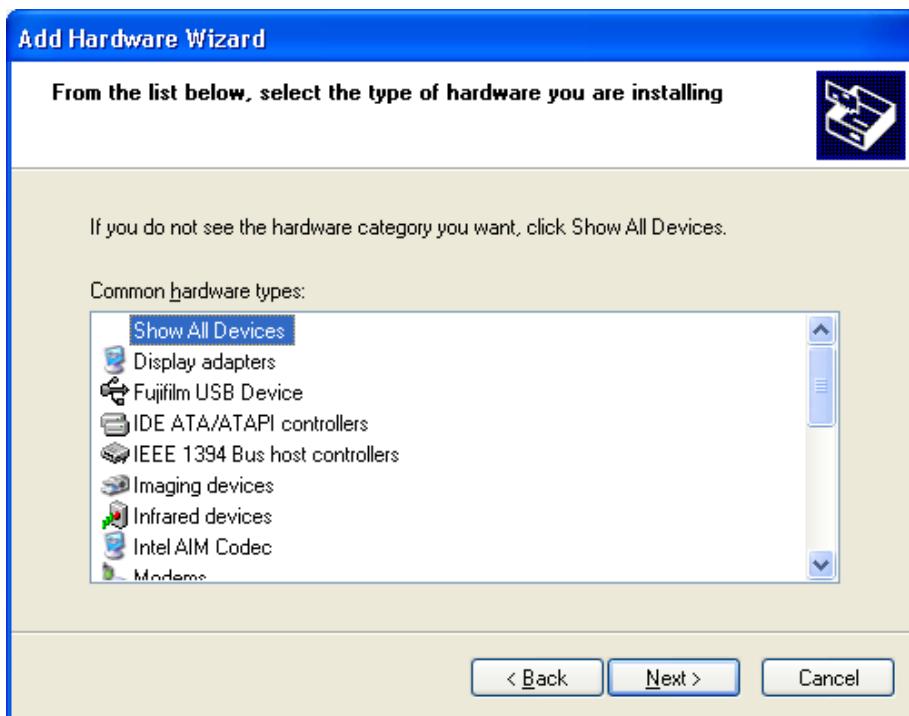
### 6.1 Installation (Windows XP)

#### 6.1.1 Installation of USB Control Driver

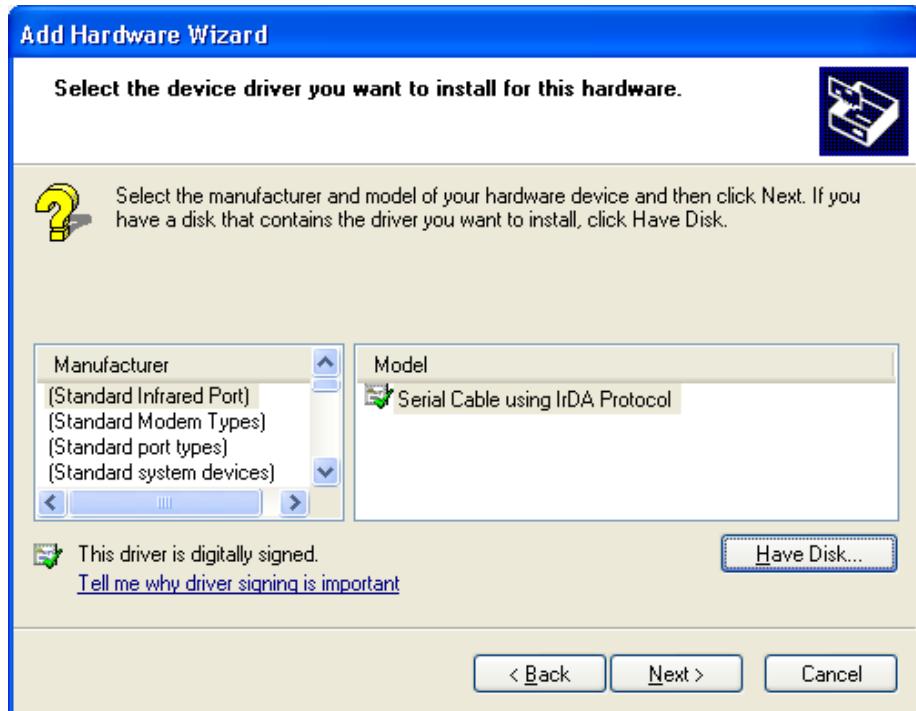
6 Select **Install the hardware that I manually select from a list [Advanced]** and click the **Next** button.



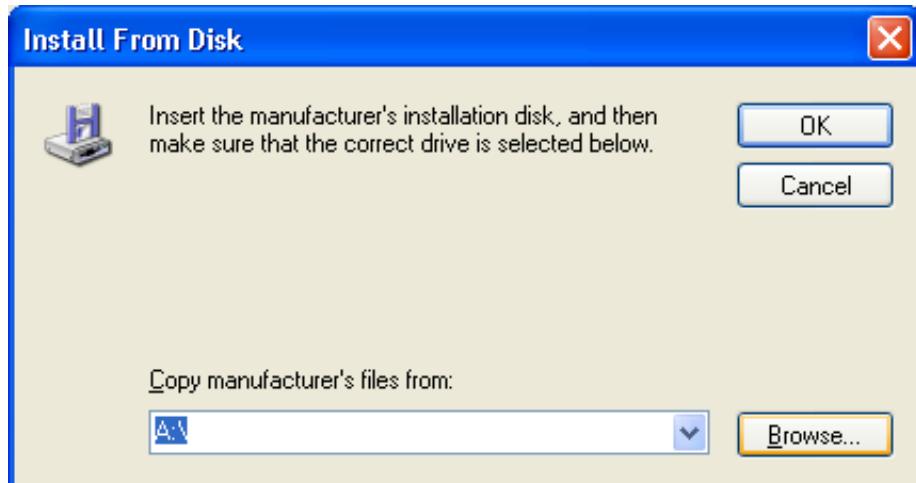
7 Select **Show All Devices** and click the **Next** button.



8 Click the **Have Disk** button.



9 Insert the Typhoon FLA 7000 Control Software CD and click the **Browse** button.

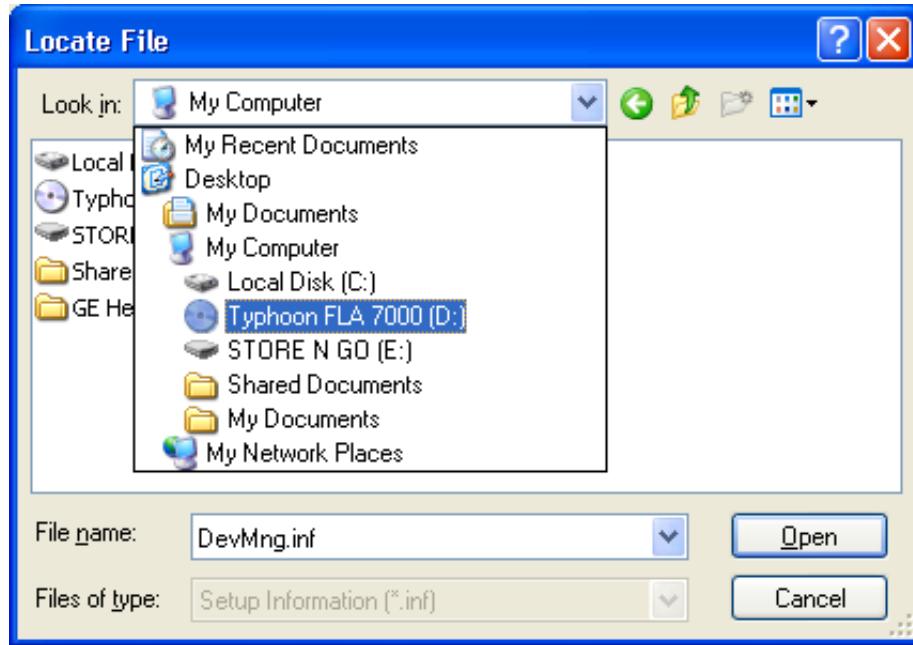


## 6 Installing and uninstalling the software

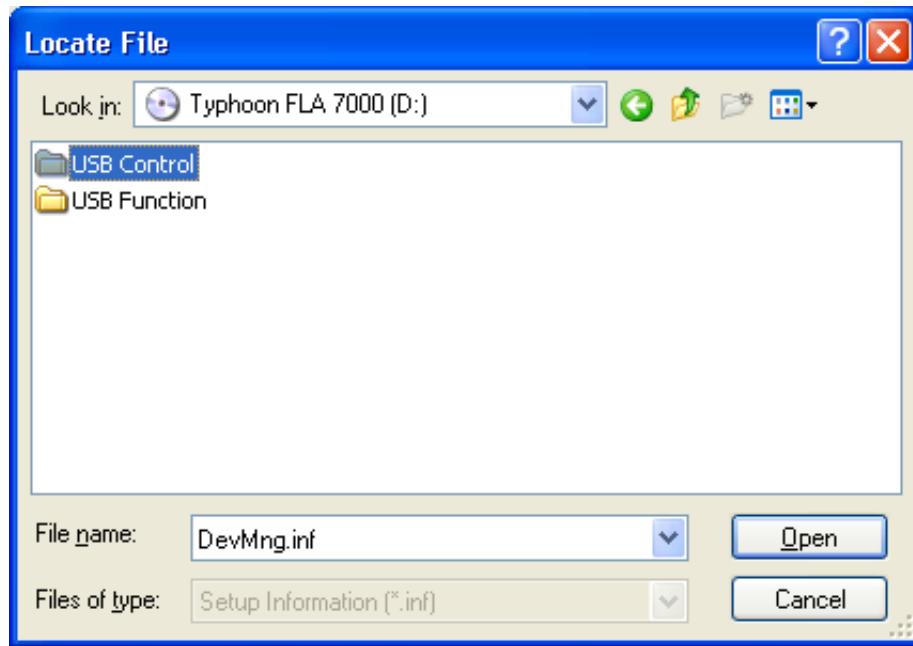
### 6.1 Installation (Windows XP)

#### 6.1.1 Installation of USB Control Driver

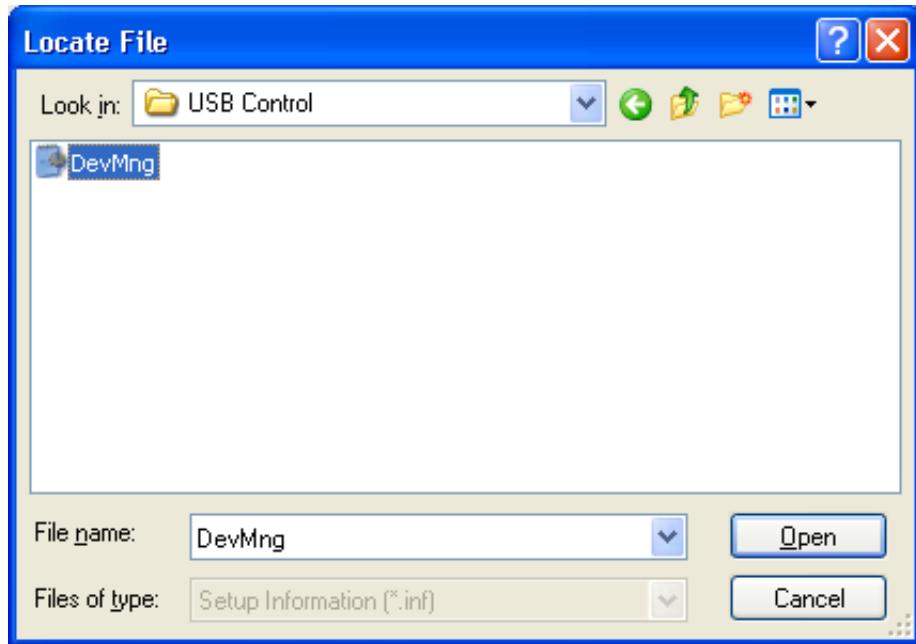
10 Select to install the driver from the Typhoon FLA 7000 Control Software CD.



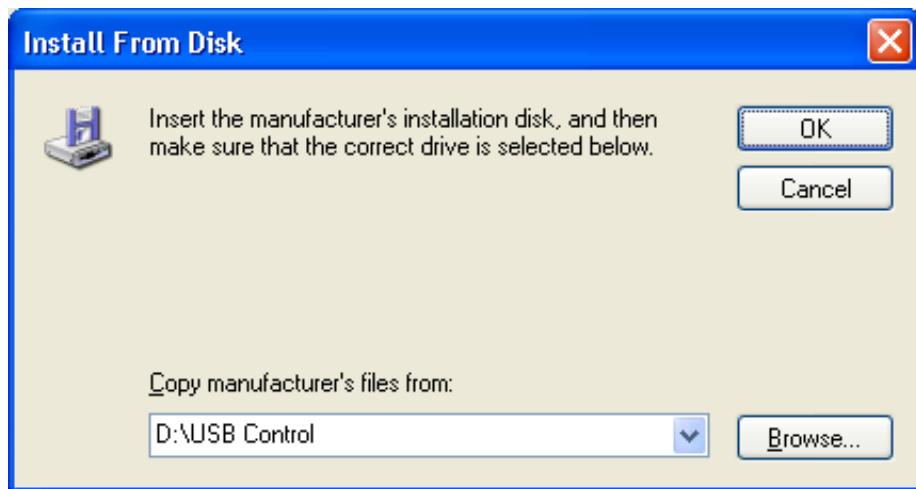
11 Open the **USB Control** folder.



12 Select the **DevMng.inf** file and click the **Open** button.



13 Click the **OK** button.

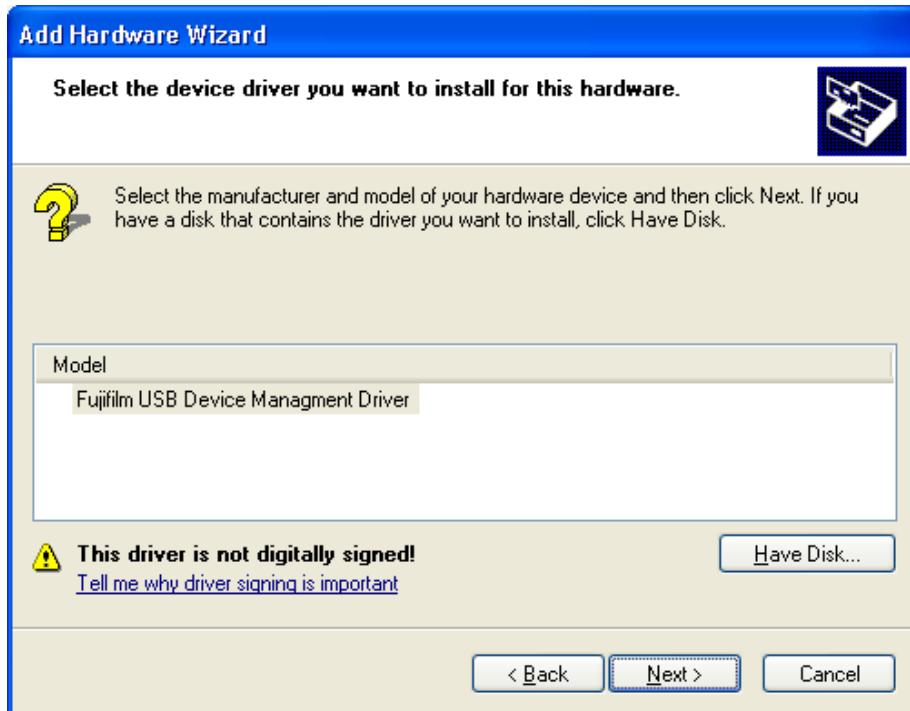


## 6 Installing and uninstalling the software

### 6.1 Installation (Windows XP)

#### 6.1.1 Installation of USB Control Driver

14 Click the **Next** button.



15 Click the **Next** button.



16 Click the **Continue Anyway** button.



17 Click the **Finish** button.



## 6 Installing and uninstalling the software

### 6.1 Installation (Windows XP)

#### 6.1.2 Installation of USB Function driver

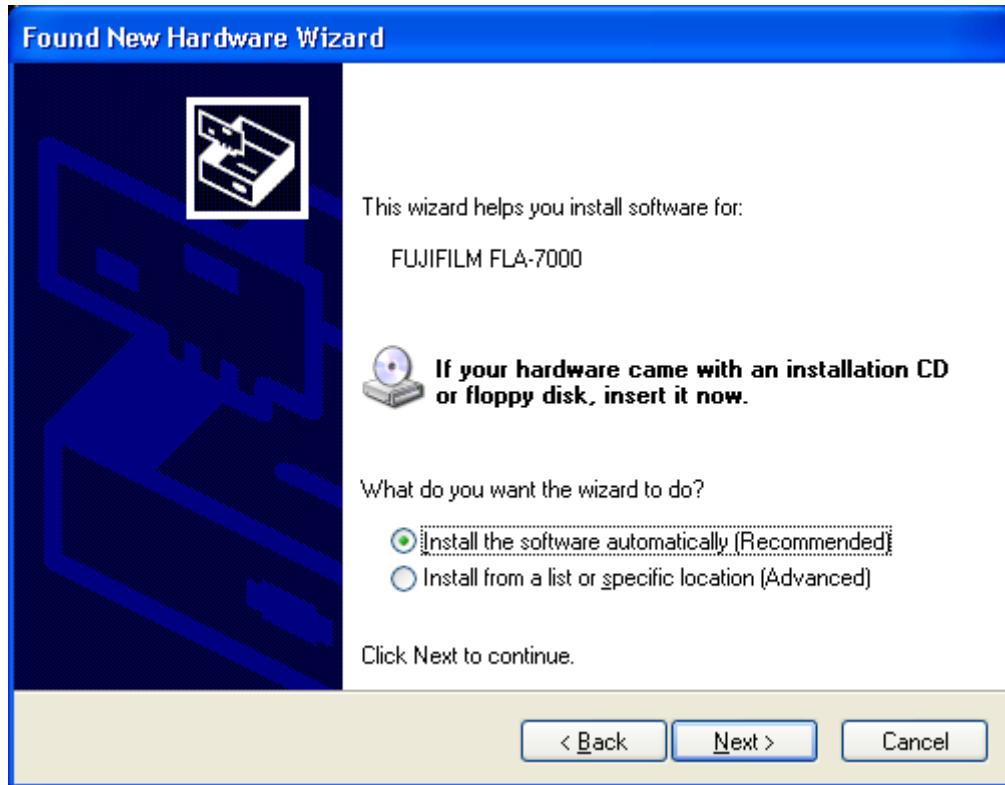
- 1 Connect the computer and the Typhoon FLA 7000 with a USB cable and turn **ON** the power switch of Typhoon FLA 7000.

*Result:* The scanner will automatically be detected by the computer.

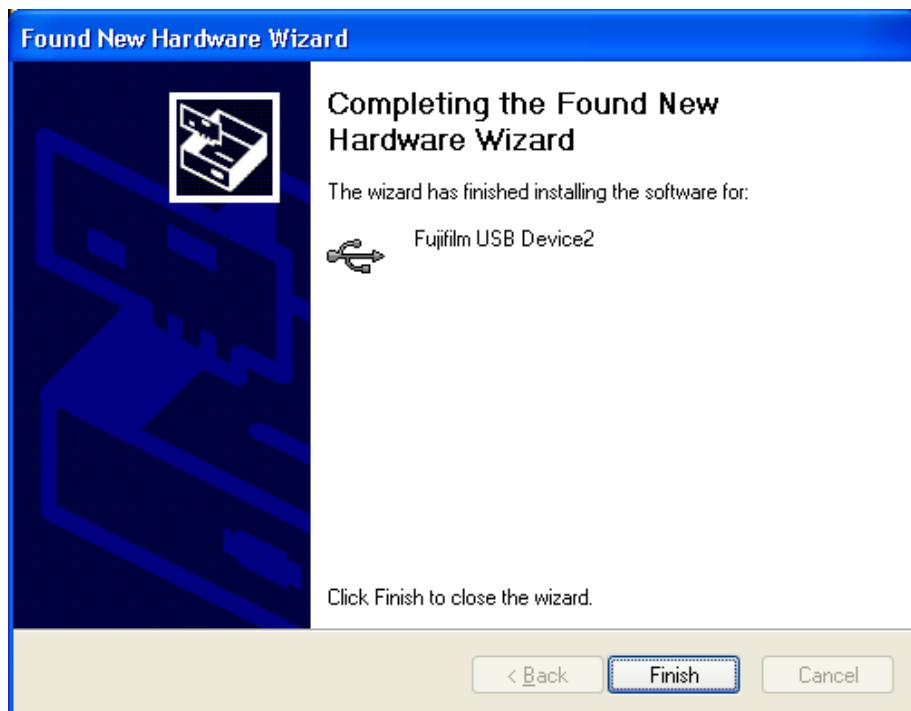
- 2 In the **Found New Hardware Wizard** dialog, choose **No, not this time** and click the **Next** button.



- 3 Insert the installation CD, select **Install the software automatically (Recommended)** and click the **Next** button.

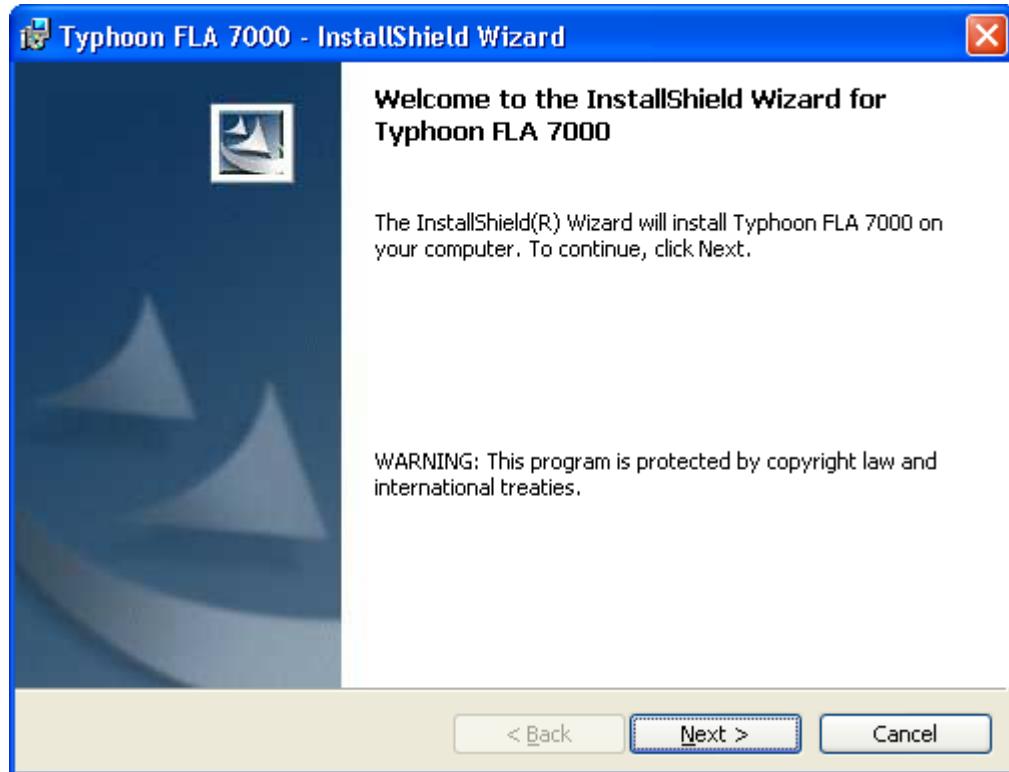


- 4 Click the **Finish** button to complete the installation.

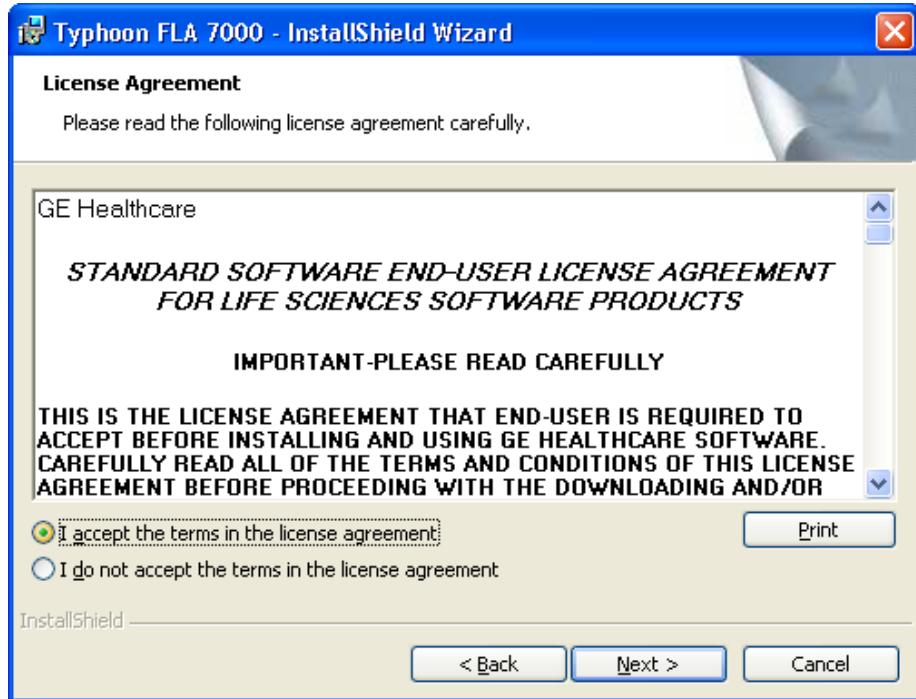


### 6.1.3 Installation of Typhoon FLA 7000 Control Software

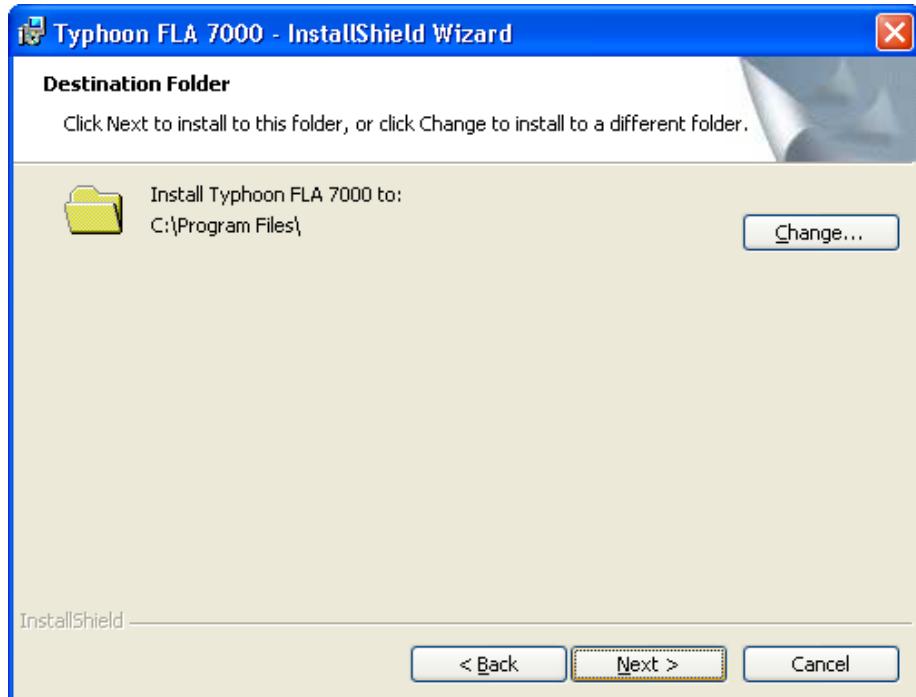
- 1 Insert the Typhoon FLA 7000 Control Software CD.
- 2 Locate and double-click the file Typhoon FLA 7000.msi.
- 3 In the **Typhoon FLA 7000 - InstallShield Wizard**, click the **Next** button.



- 4 Read the license text. If the license agreement is not acceptable please contact a GE Healthcare representative, see back cover of this manual for contact information.  
Select **I accept the terms in the license agreement** and click the **Next** button.



5 Select destination folder in the dialog:



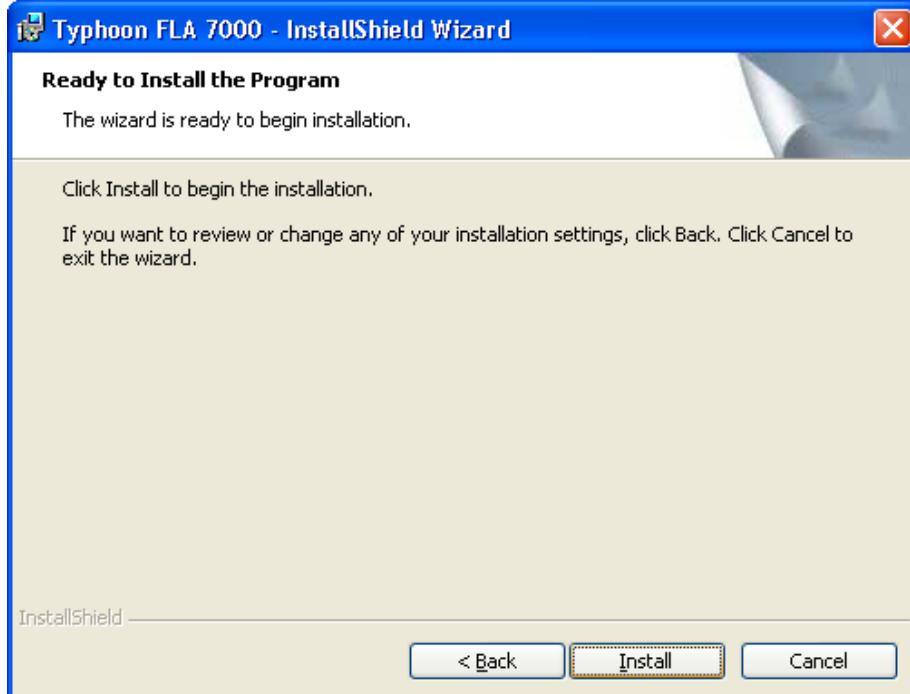
- Click the **Next** button to install the software at the default folder **C:\Program Files**.
- Click the **Change** button to install to a different folder.

## 6 Installing and uninstalling the software

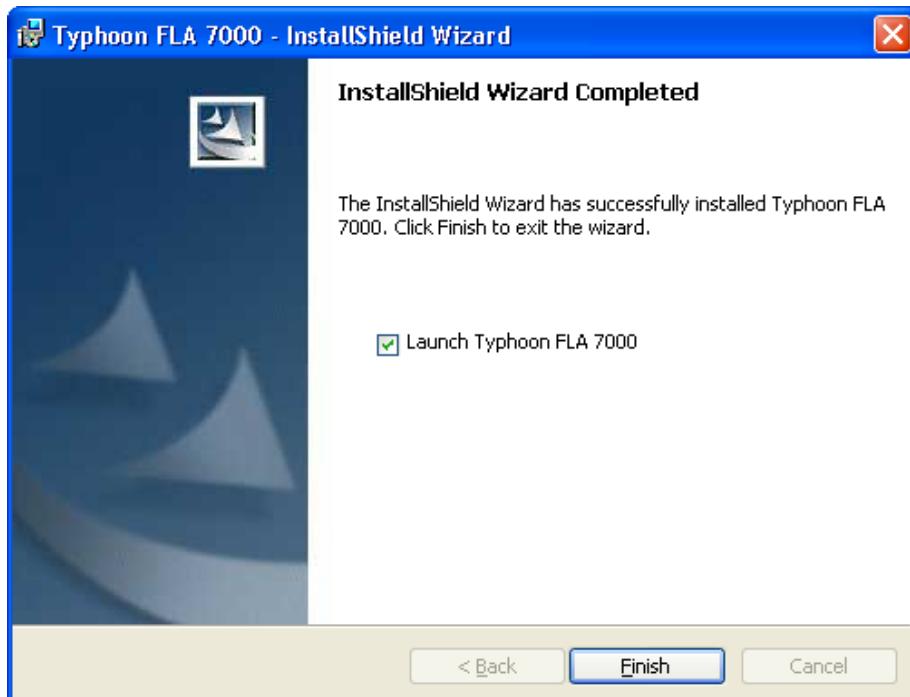
### 6.1 Installation (Windows XP)

#### 6.1.3 Installation of Typhoon FLA 7000 Control Software

- 6 Click the **Install** button.



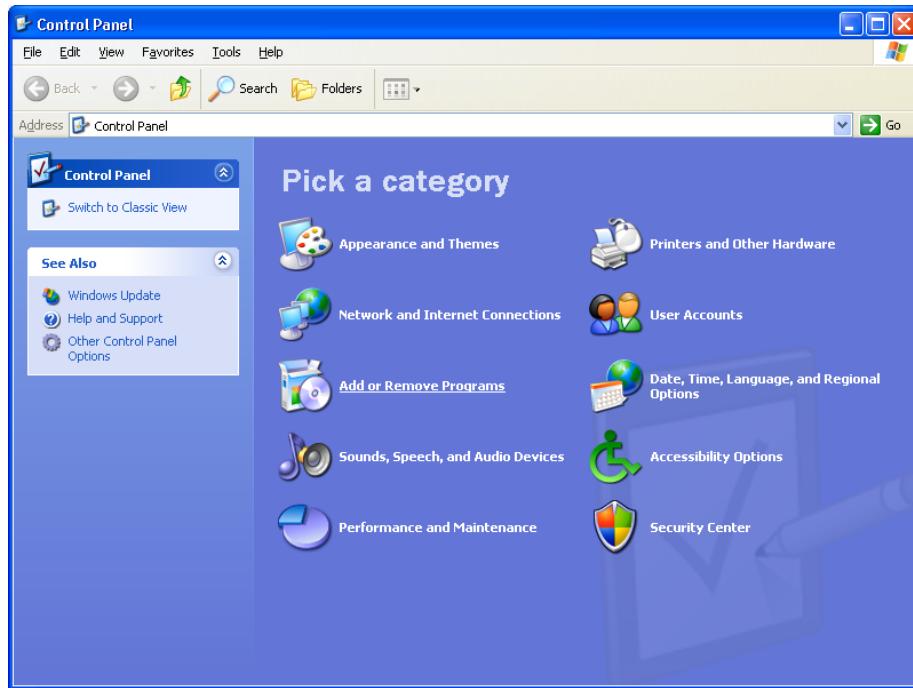
- 7 Click the **Finish** button.



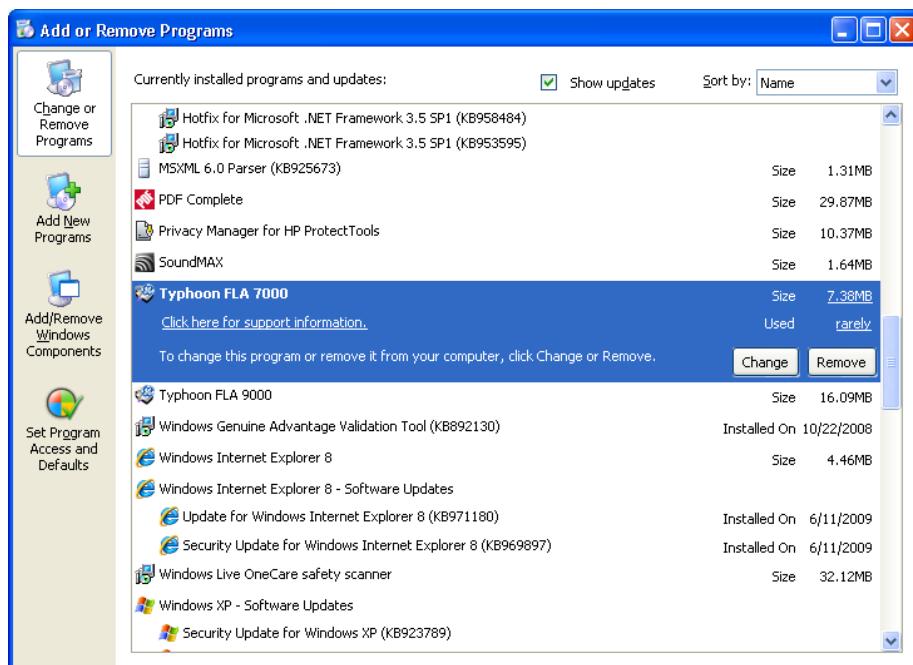
The installation of Typhoon FLA 7000 Control Software is now completed.

## 6.2 Uninstallation (For Windows XP)

- 1 Open the control panel and select **Add or Remove Programs**.



- 2 Select **Typhoon FLA 7000** and click the **Remove** button.



## 6 Installing and uninstalling the software

### 6.2 Uninstallation (For Windows XP)

3 Click **Yes**.



Result: A progress bar is displayed and uninstallation is started.

**Note:** Correction files created during calibration, such as shading data are required by the Typhoon FLA 7000 Control Software. They are not deleted during the uninstallation, and remain in the Data folder of Typhoon FLA 7000 Control Software folder.

## 6.3 Installation (Windows Vista)

Installation is performed in the following sequence.

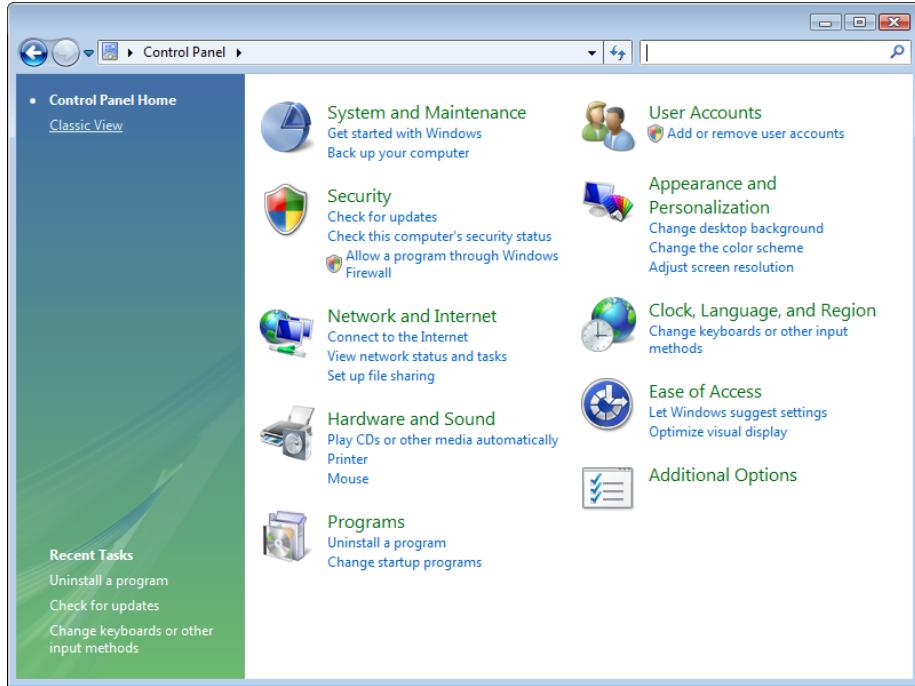
- 1 Installation of USB Control driver
- 2 Installation of USB Function driver
- 3 Installation of Typhoon FLA 7000 Control Software

### 6.3.1 Installation of USB control driver

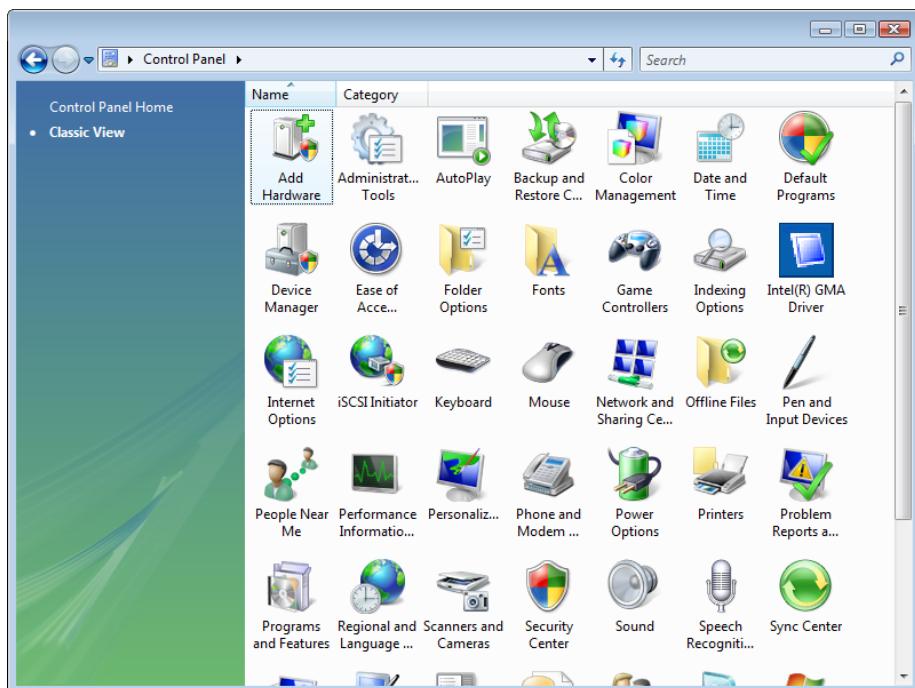
**Note:** The computer and Typhoon FLA 7000 **must not** be connected with a USB cable during the operation.

**Note:** During software installations, you may be asked to confirm your actions in a dialog with the text **Windows needs your permission to continue**. Enter an administrator password, if prompted, then click **Continue** to proceed with the installation.

- 1 Open the control panel and click **Classic View** in the upper left corner.



- 2 Open **Add Hardware**.

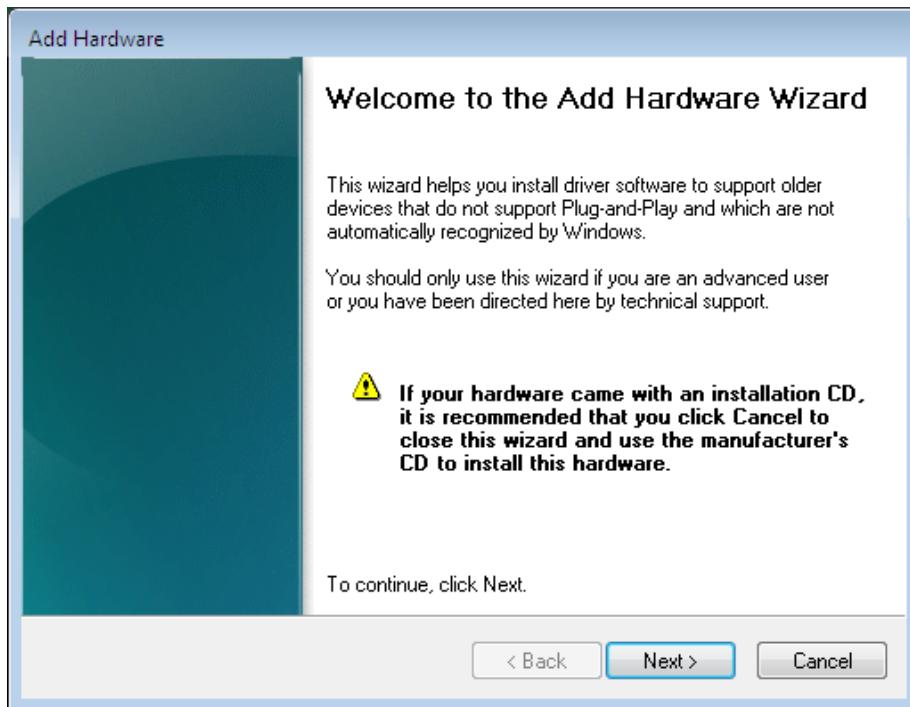


## 6 Installing and uninstalling the software

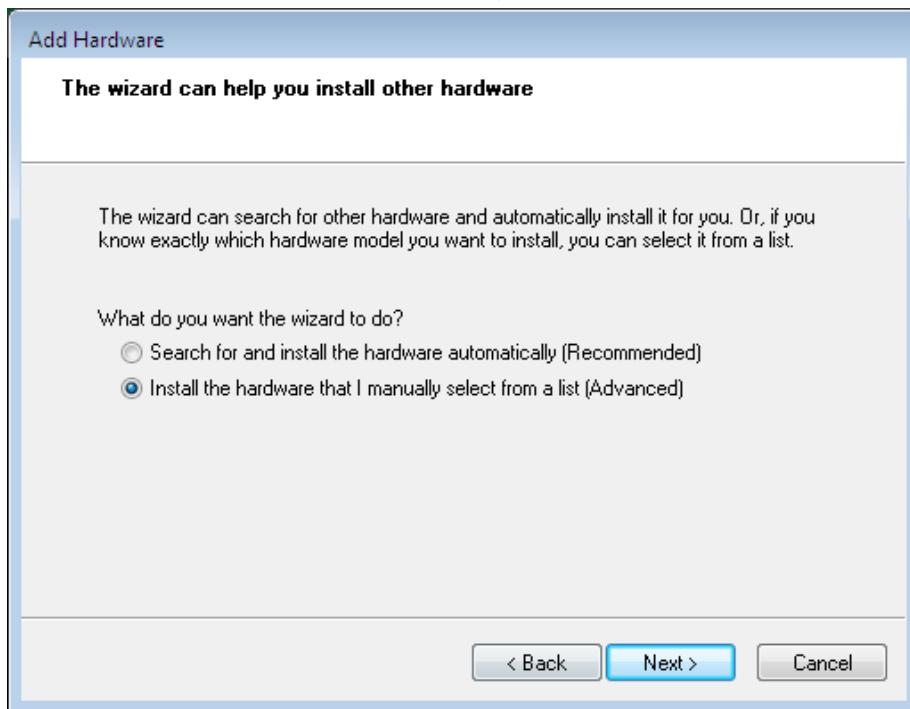
### 6.3 Installation (Windows Vista)

#### 6.3.1 Installation of USB control driver

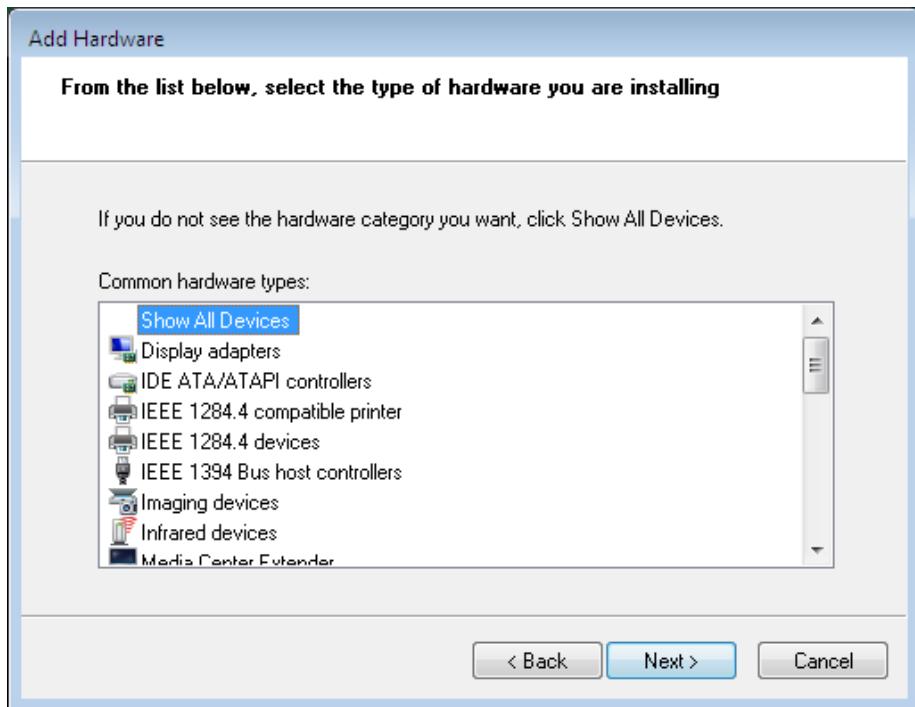
- 3 In the **Add Hardware** dialog, click the **Next** button.



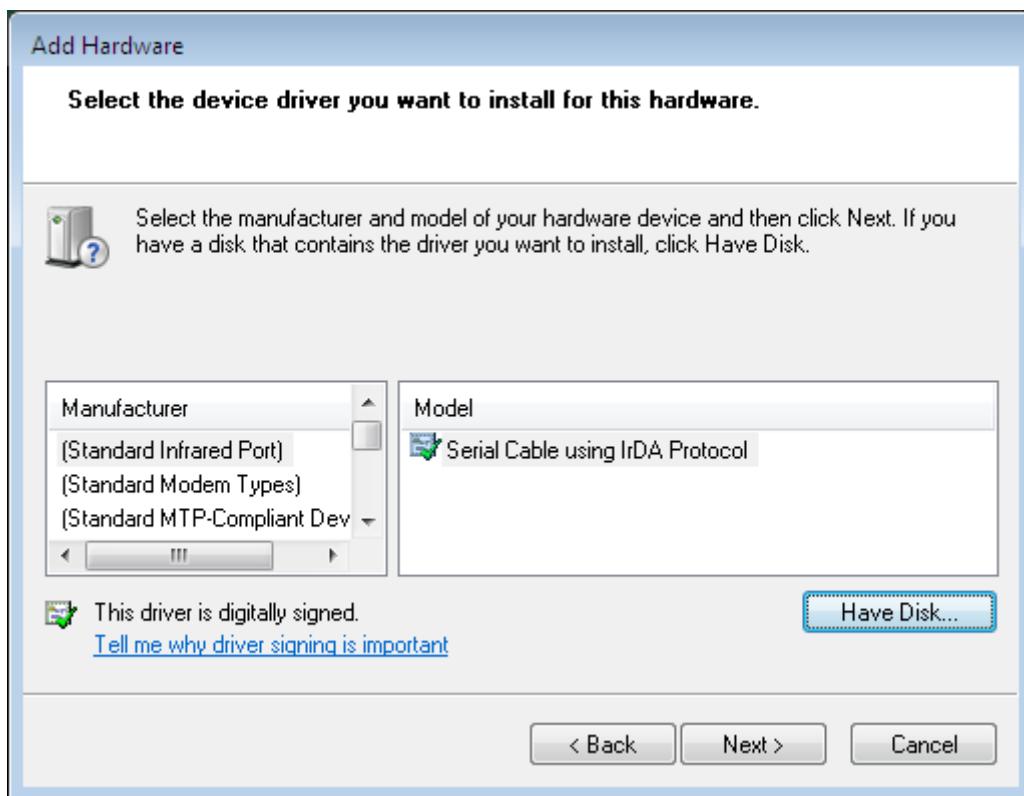
- 4 Select **Install the hardware that I manually select from a list (Advanced)** and click the **Next** button.



5 Select **Show All Devices** and click the **Next** button.



6 Click the **Have Disk** button.

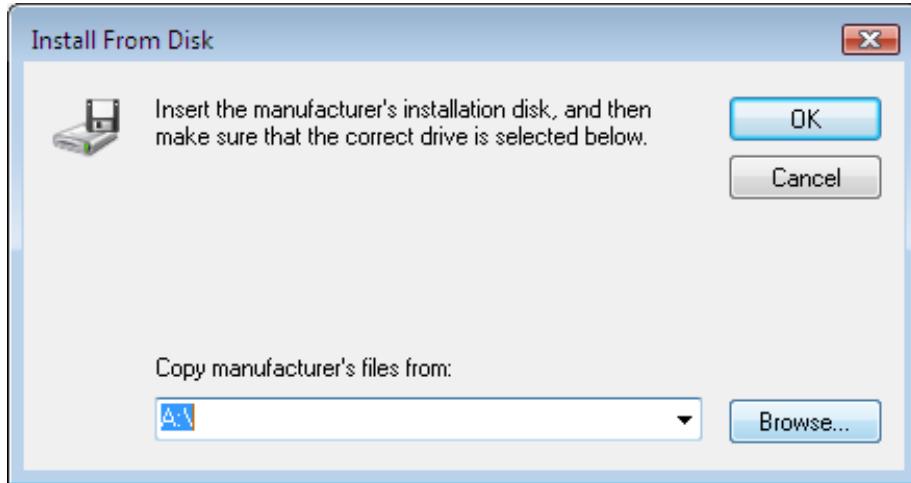


## 6 Installing and uninstalling the software

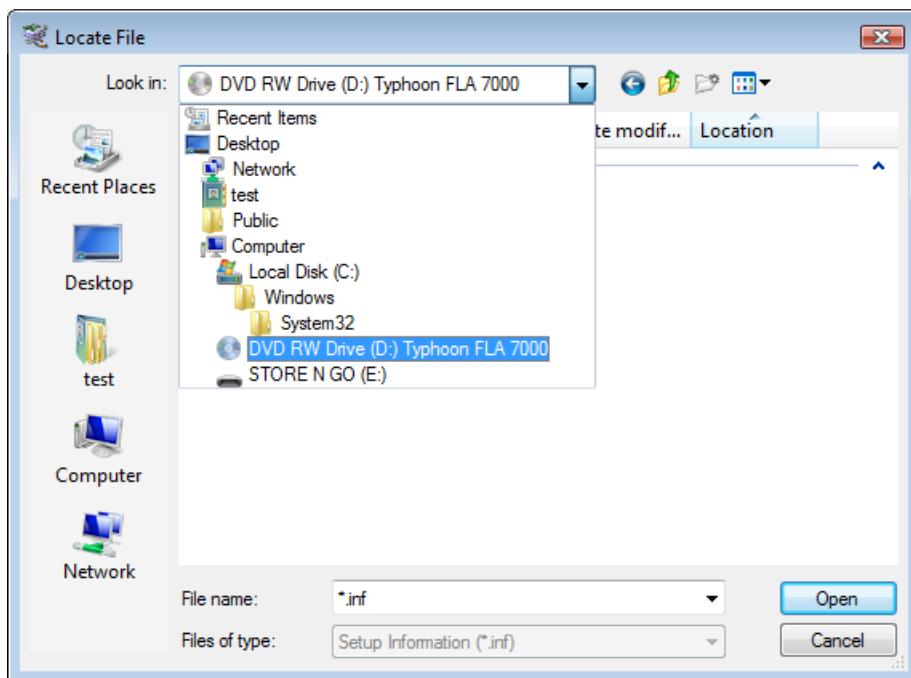
### 6.3 Installation (Windows Vista)

#### 6.3.1 Installation of USB control driver

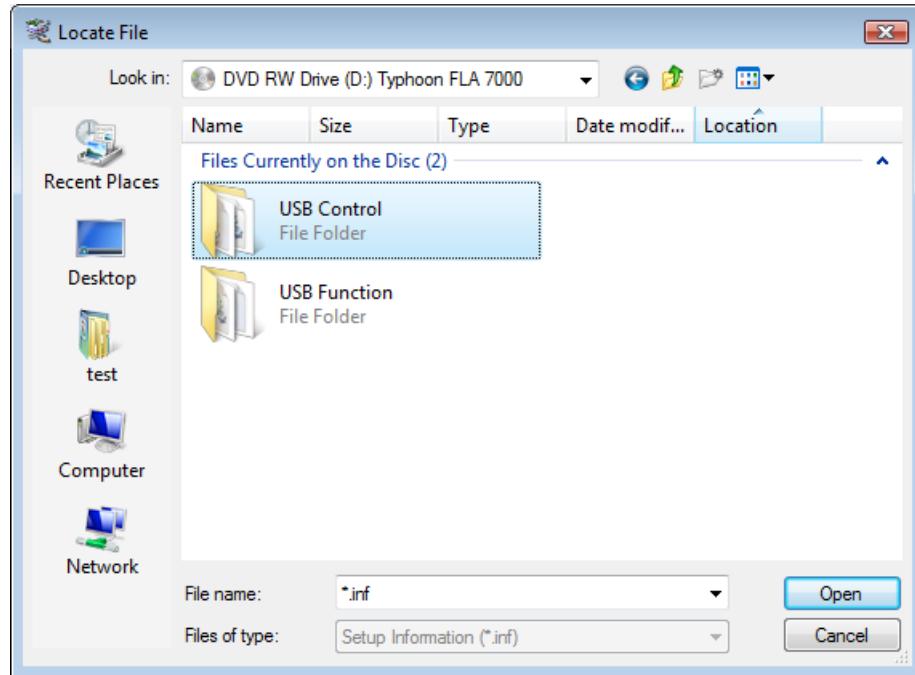
- 7 Insert the Typhoon FLA 7000 Control Software CD and click the **Browse** button.



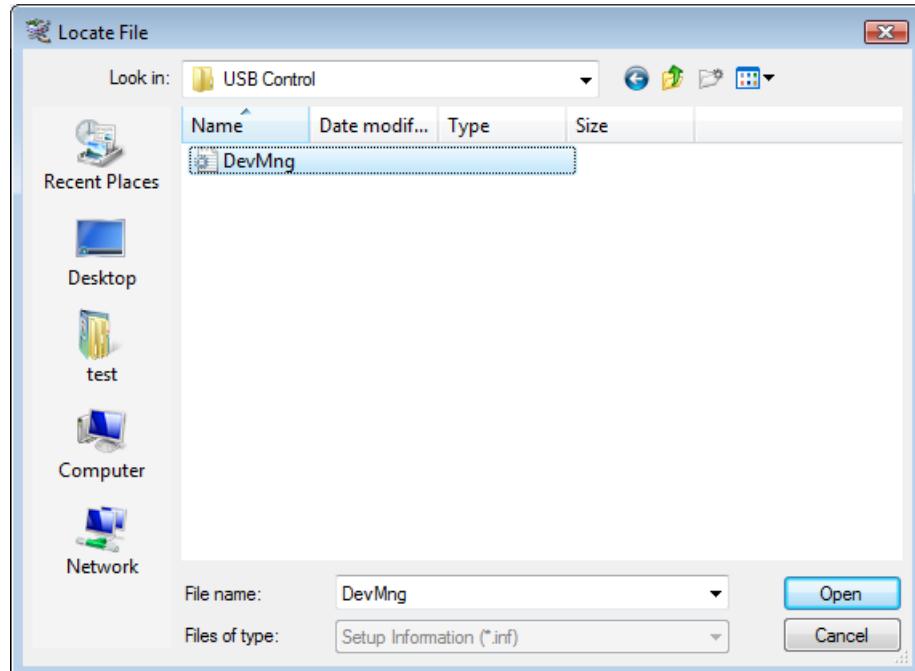
- 8 Select to install the driver from the Typhoon FLA 7000 Control Software CD.



9 Open the **USB Control** folder.



10 Select the file **DevMng** and click the **Open** button.

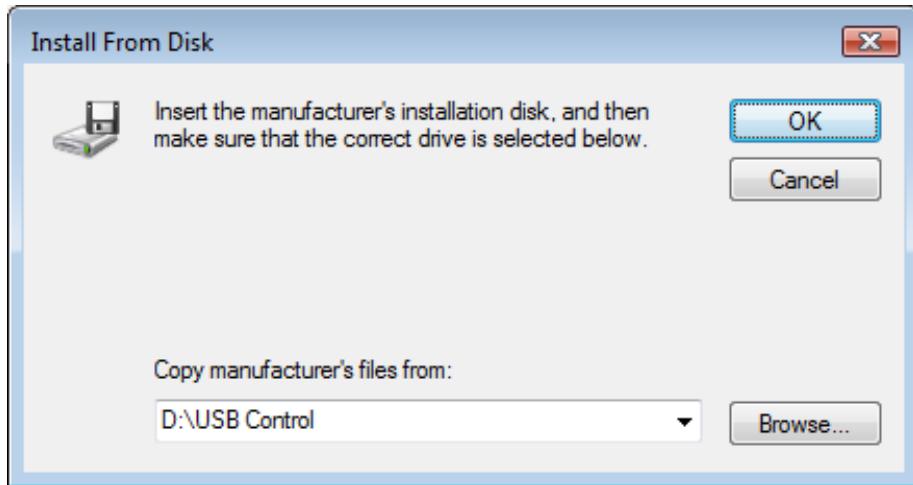


## 6 Installing and uninstalling the software

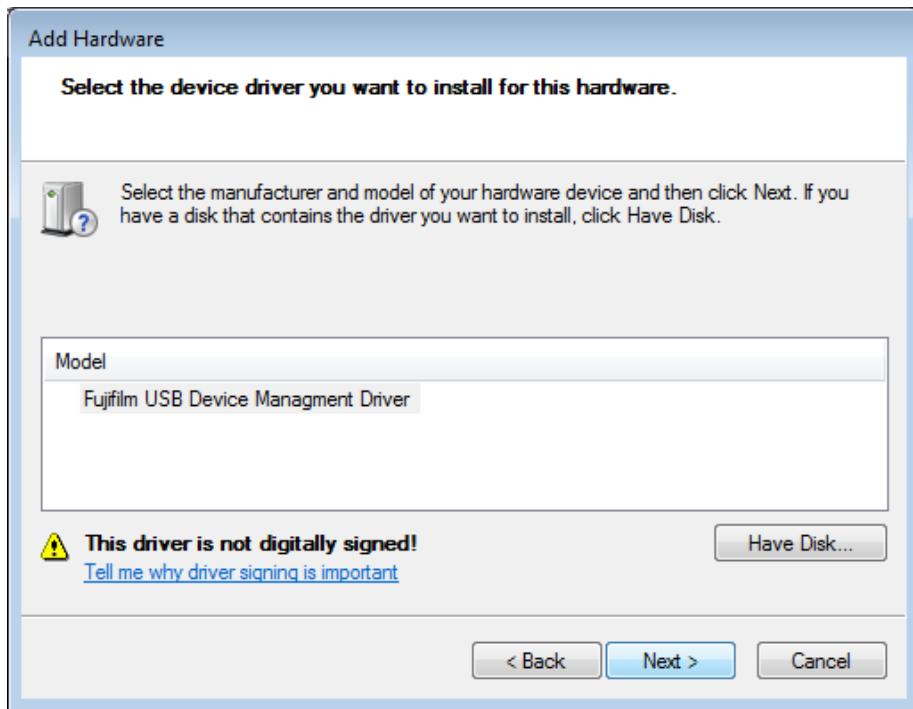
### 6.3 Installation (Windows Vista)

#### 6.3.1 Installation of USB control driver

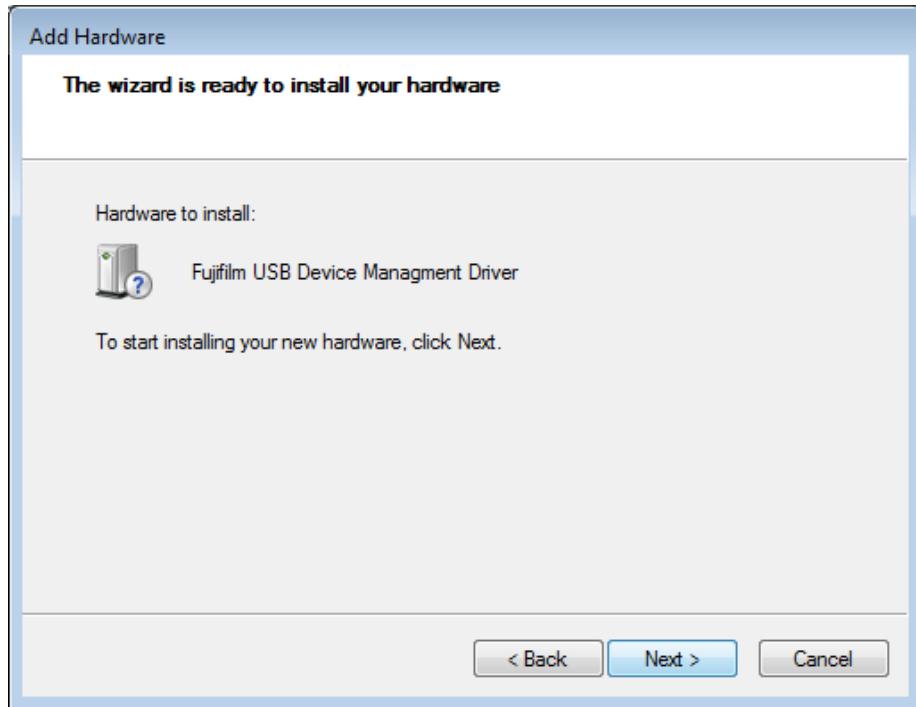
11 Click the **OK** button.



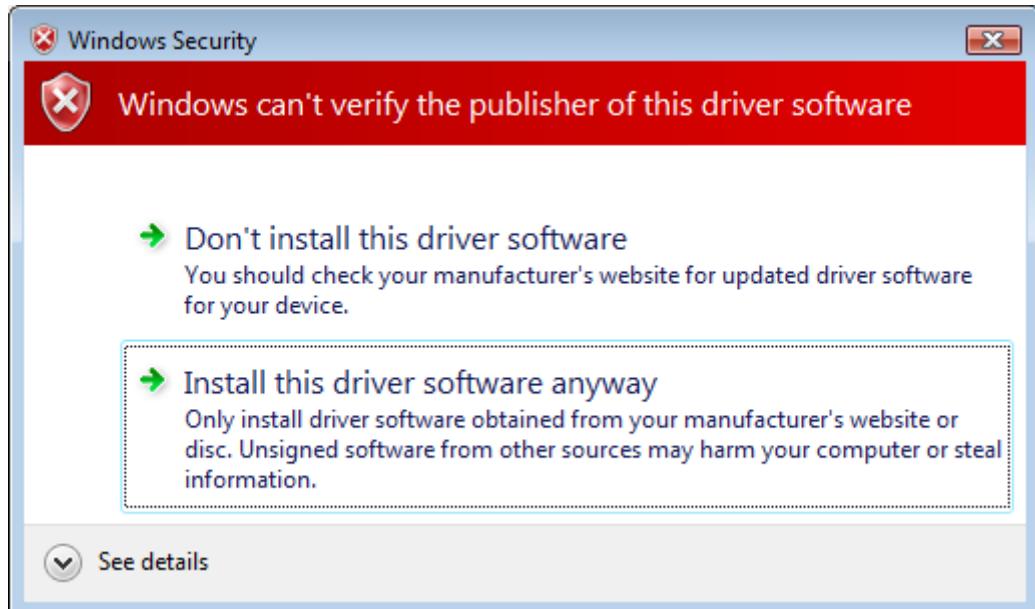
12 Click the **Next** button.



13 Click the **Next** button.



14 Click *Install this driver software anyway*.

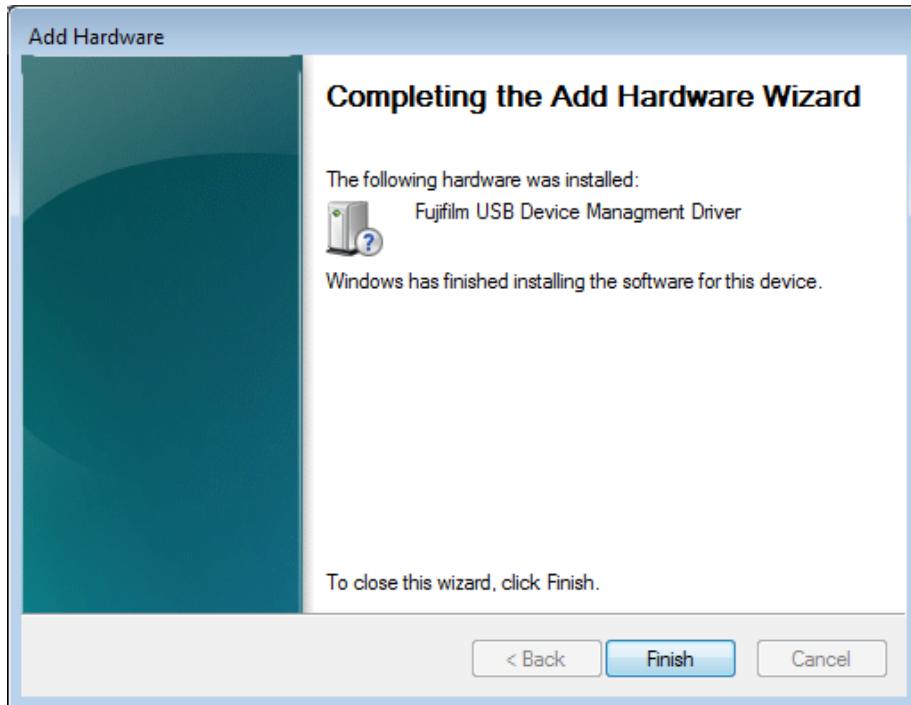


## 6 Installing and uninstalling the software

### 6.3 Installation (Windows Vista)

#### 6.3.1 Installation of USB control driver

15 Click the **Finish** button.



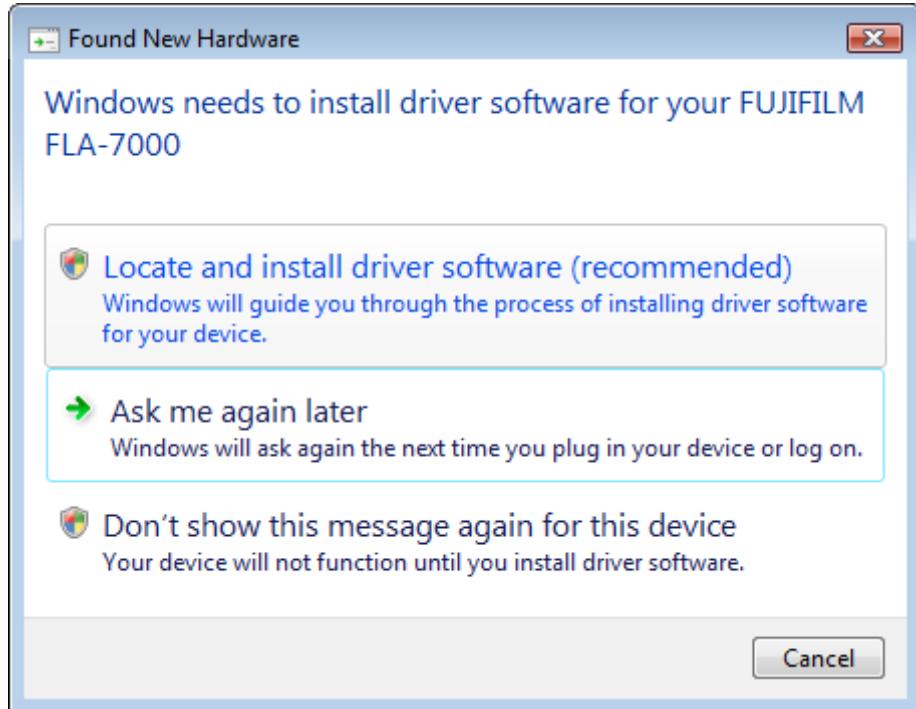
#### 6.3.2 Installation of USB function driver

**Note:** During software installations, you may be asked to confirm your actions in a dialog with the text **Windows needs your permission to continue**. Enter an administrator password, if prompted, then click **Continue** to proceed with the installation.

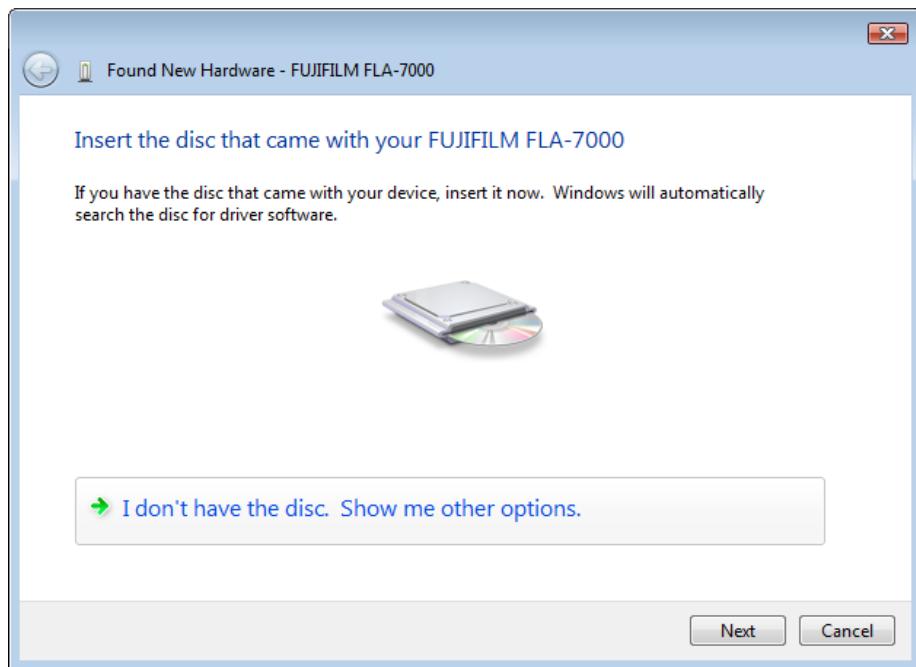
- 1 Connect the computer and the Typhoon FLA 7000 with a USB cable and turn **ON** the power switch of Typhoon FLA 7000.

*Result:* The scanner will automatically be detected by the computer and the Plug and Play function in Windows Vista starts.

2 In the **Found New Hardware** dialog, select **Locate and install driver software (recommended)**.



3 Insert the Typhoon FLA 7000 Control Software CD and click the **Next** button in the **Found New Hardware** dialog.

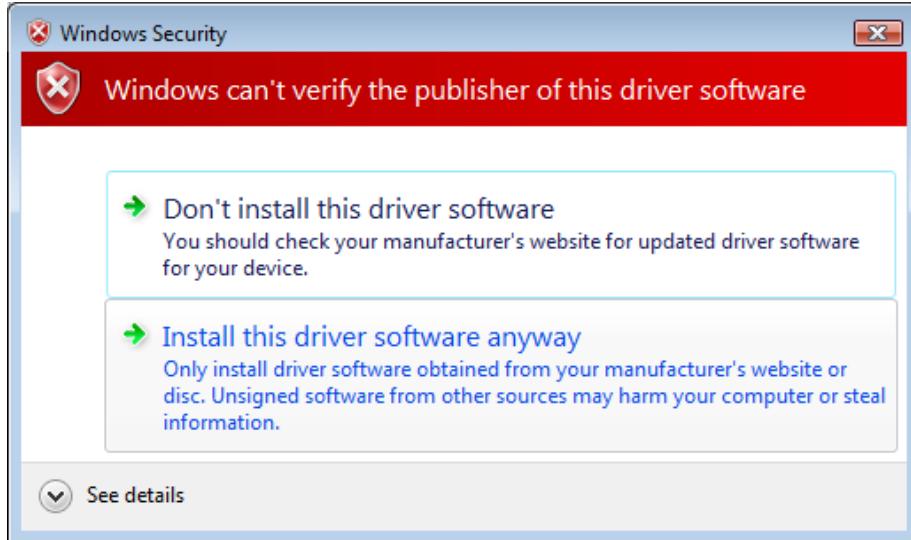


## 6 Installing and uninstalling the software

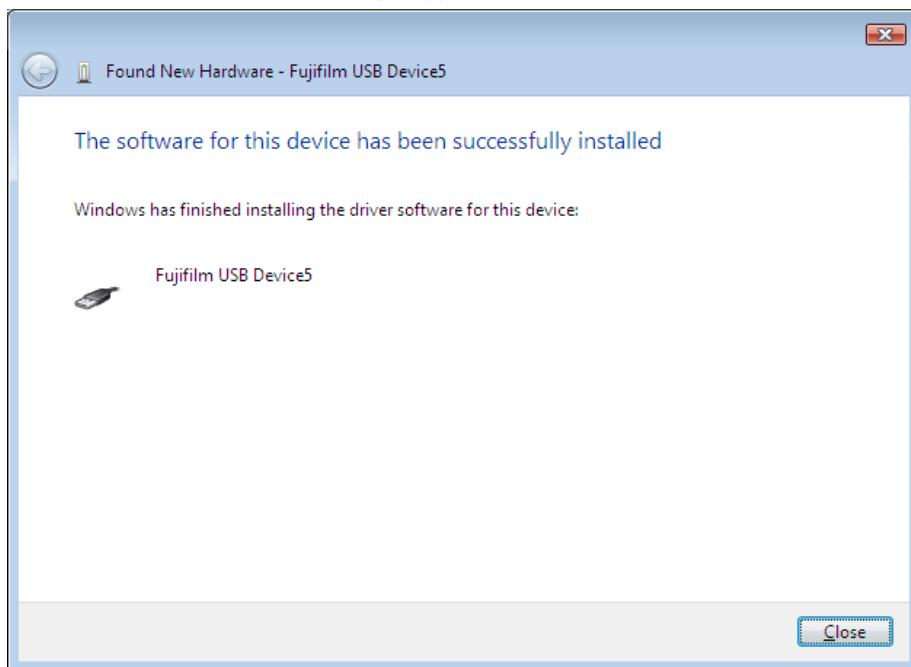
### 6.3 Installation (Windows Vista)

#### 6.3.2 Installation of USB function driver

- 4 Select **Install this driver software anyway**.



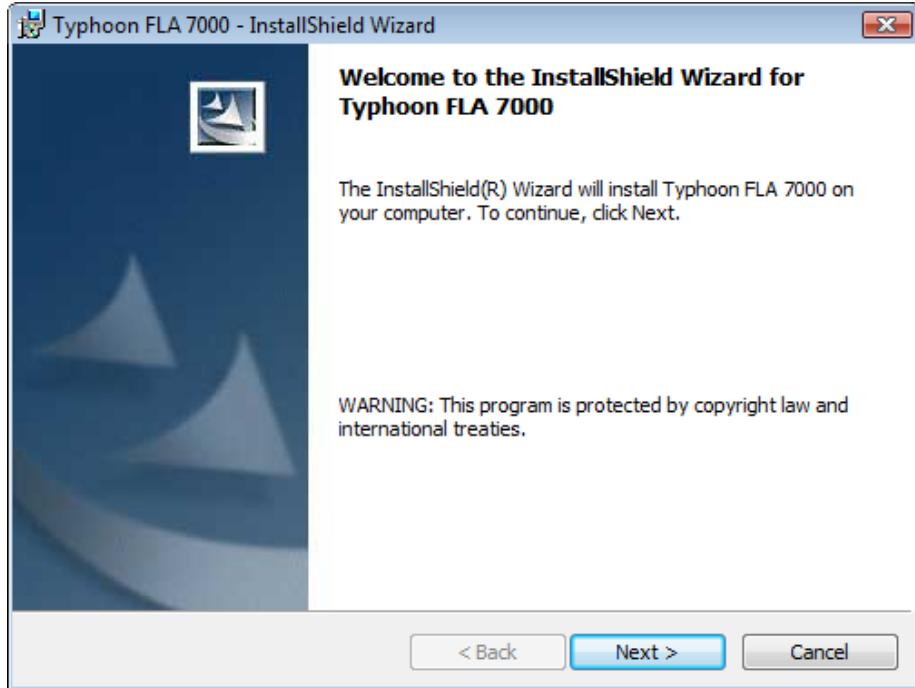
- 5 A successful installation message appears. Click the **Close** button.



### 6.3.3 Installation of Typhoon FLA 7000 Control Software

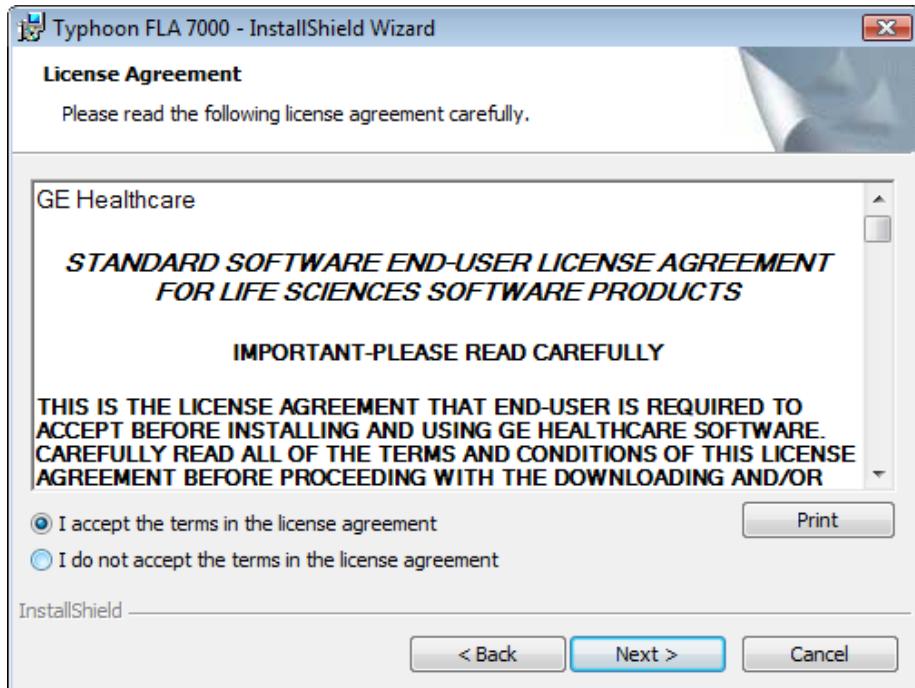
- 1 Insert the **Typhoon FLA 7000 Control Software** CD.
- 2 Locate and double-click the file Typhoon FLA 7000.msi.

3 In the *Typhoon FLA 7000 - InstallShield Wizard* dialog, click the **Next** button.



4 Read the license text. If the license agreement is not acceptable, please contact a GE Healthcare representative. See the back cover of this manual for contact information.

Select *I accept the terms in the license agreement* and click the **Next** button.

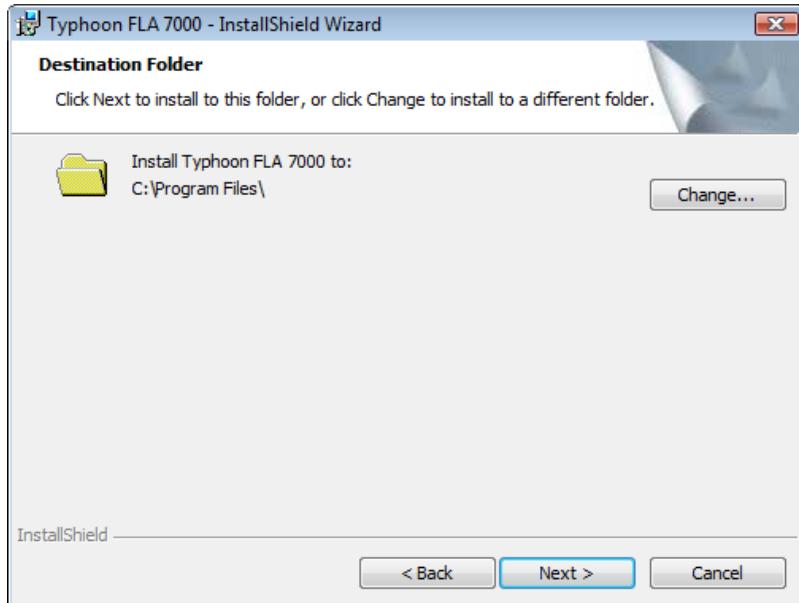


## 6 Installing and uninstalling the software

### 6.3 Installation (Windows Vista)

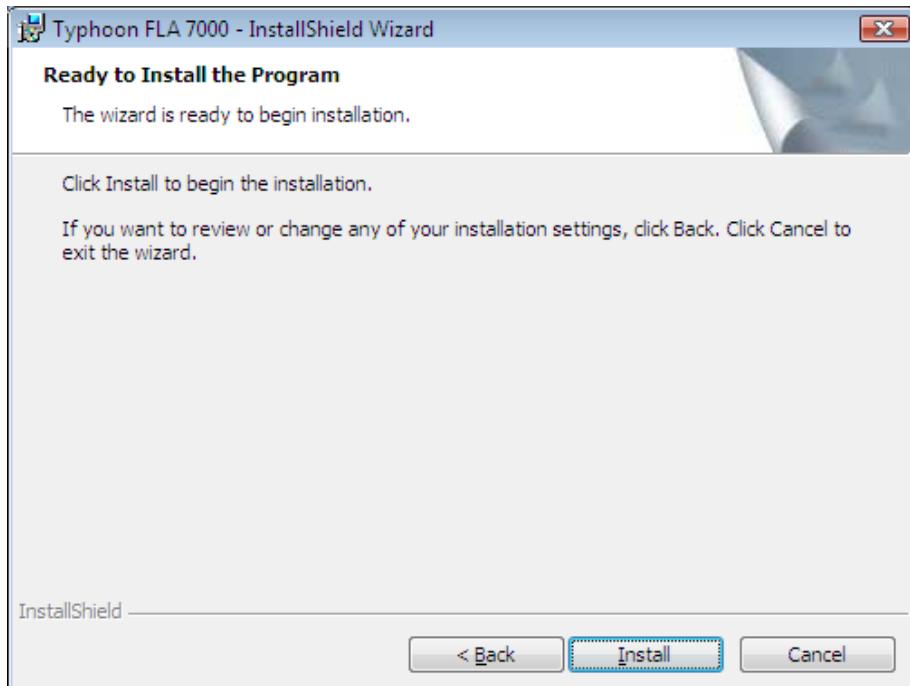
#### 6.3.3 Installation of Typhoon FLA 7000 Control Software

5 Select destination folder in the dialog:

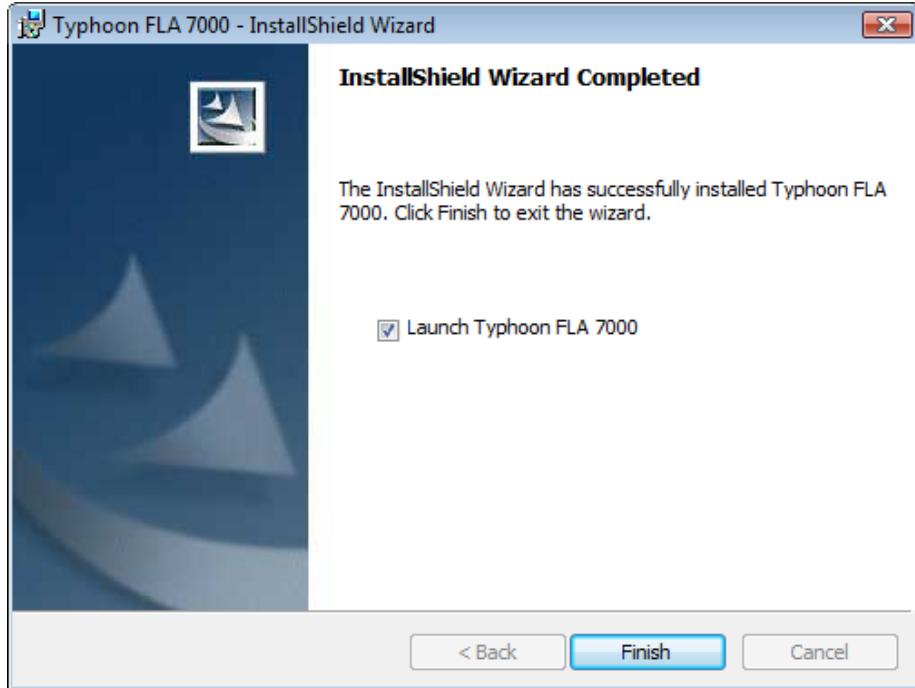


- Click the **Next** button to install the software at the default folder **C:\Program Files**.
- Click the **Change** button to install to a different folder.

6 Click the **Install** button.



- 7 Click the **Finish** button.



The installation of Typhoon FLA 7000 Control Software is now completed.

- 8 If User Account Control (UAC) is enabled in Windows Vista, a dialog displays the message ***An unidentified program wants access to your computer***. Click **Allow**.

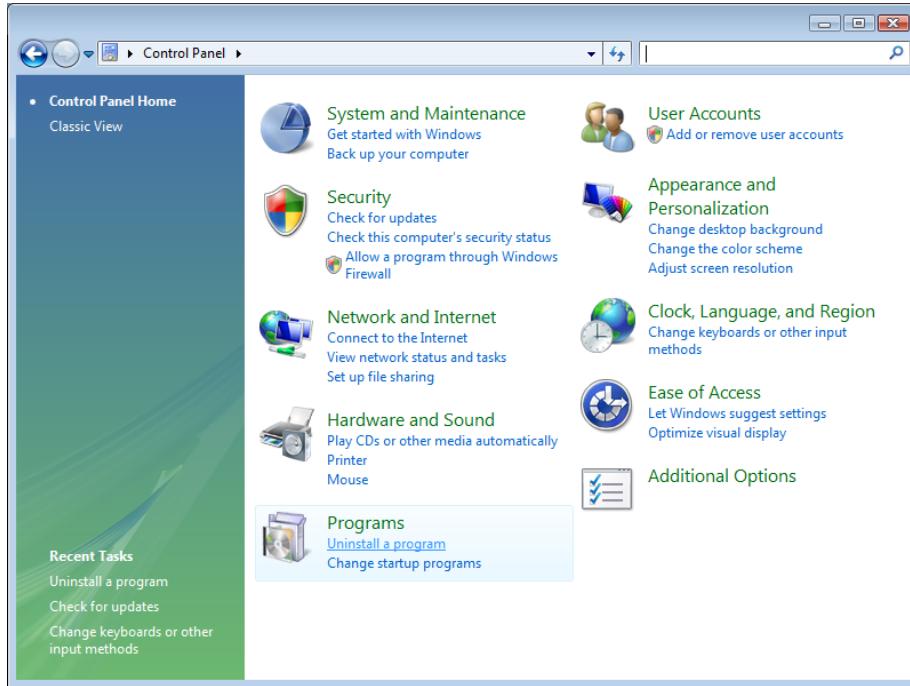
## 6 Installing and uninstalling the software

### 6.3 Installation (Windows Vista)

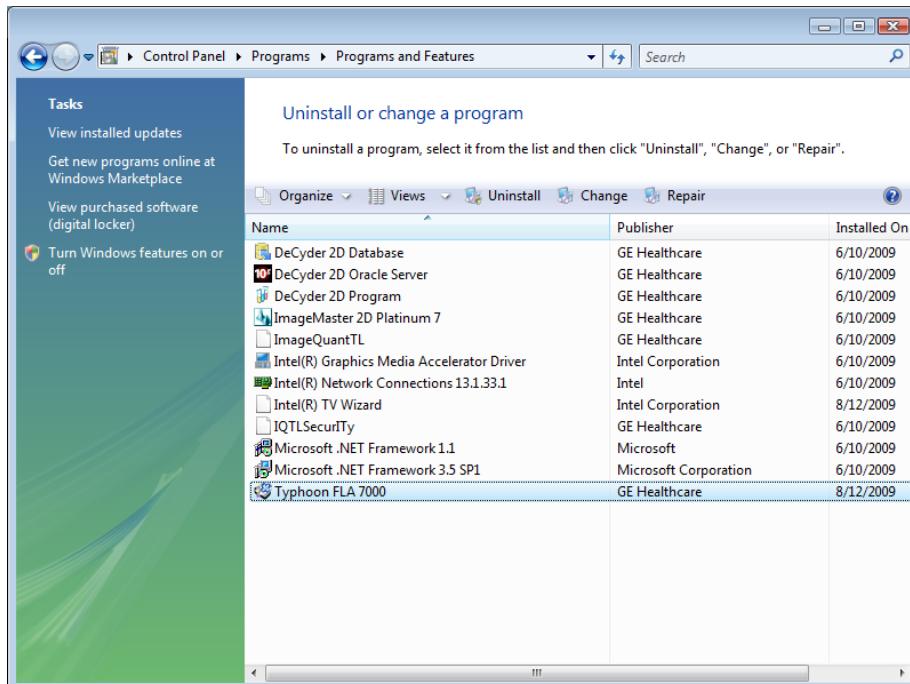
#### 6.3.3 Installation of Typhoon FLA 7000 Control Software

## 6.4 Uninstallation (Windows Vista)

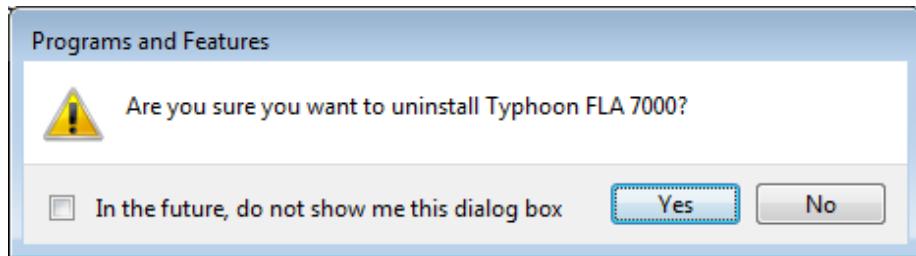
- 1 Select **Uninstall a program** under **Programs** in Control Panel.



- 2 Select **Typhoon FLA 7000** and then click **Uninstall**.



3 Click **Yes** to uninstall the program.



4 If User Account Control (UAC) is enabled in Windows Vista, a dialog displays the message **An unidentified program wants access to your computer**. Click **Allow**.

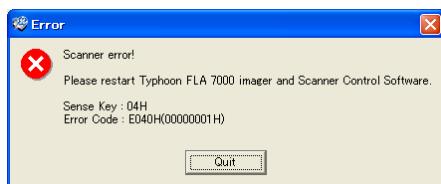
# 7 Troubleshooting

## 7.1 Errors

An error is the condition in which all of the reading modes of Typhoon FLA 7000 cannot be used.

When an error occurs, the indicator lamps light up and there is a beeping sound.

An error message dialog box is displayed on the Typhoon FLA 7000 Control Software screen displayed on the computer.



Please contact GE Healthcare and be prepared to state the four-digit Error Code and the eight-digit number inside the parentheses.

## 7.2 Warnings

The following are examples of warnings that are displayed as messages in the Typhoon FLA 7000 Control Software window. If a displayed message includes instructions, please follow them.

Message	Meaning and Countermeasure
Filter module has not been setup. Push the filter module button and set up the filter module.	Meaning: <ul style="list-style-type: none"><li>• A filter module has not been set.</li><li>• Click the filter module button, and set a filter module.</li></ul> Countermeasure: <ul style="list-style-type: none"><li>• Confirm that a filter module is set.</li><li>• If not, set a filter module using the filter module button.</li></ul>
The combination of the lasers and filters could be inappropriate. Check the lasers and filters.	Meaning: <ul style="list-style-type: none"><li>• There is a possibility that the laser and filter combination is inappropriate. Please check the laser and filter.</li></ul> Countermeasure: <ul style="list-style-type: none"><li>• Confirm the Methods registered. It is possible that the laser and filter combination is inappropriate.</li><li>• Confirm that the filter specified in the Typhoon FLA 7000 Control Software is actually set.</li></ul>

Message	Meaning and Countermeasure
<p>Laser error occurred. Use other lasers.</p>	<p>Meaning:</p> <ul style="list-style-type: none"> <li>• A laser error has occurred.</li> <li>• Use a different laser.</li> </ul> <p>Countermeasure:</p> <ul style="list-style-type: none"> <li>• An error has occurred with the laser. Restart the instrument.</li> <li>• If an error occurs even after restarting the instrument, call a serviceman.</li> <li>• It is possible to scan using a different laser.</li> </ul>
<p>Failed to retrieve picture data from PC. Check the PC setting.</p>	<p>Meaning</p> <ul style="list-style-type: none"> <li>• There was a failure in reading the image data from the computer.</li> <li>• Check the computer environment.</li> </ul> <p>Countermeasure:</p> <ul style="list-style-type: none"> <li>• It is possible that the computer's processing ability has degraded. Check the computer once, when there are no devices connected to it and no software started.</li> </ul>
<p>PMT error occurred. Use low sensitivity for the setting.</p>	<p>Meaning:</p> <ul style="list-style-type: none"> <li>• An overexposure error has been detected outside of the scanning area.</li> <li>• Scan with low sensitivity settings.</li> </ul> <p>Countermeasure:</p> <ul style="list-style-type: none"> <li>• Scan with low sensitivity settings.</li> <li>• Restart the computer.</li> <li>• If an error occurs even after restarting the instrument, call a serviceman.</li> </ul>
<p>The file name is already used.</p>	<p>Meaning:</p> <ul style="list-style-type: none"> <li>• The file name is already used for another file.</li> </ul> <p>Countermeasure:</p> <ul style="list-style-type: none"> <li>• Change the file name to make sure that the scan data is not lost.</li> </ul>
<p>Close the SampleSetDoor or FilterChangeDoor.</p>	<p>Meaning:</p> <p>Close the sample set door or the filter change door.</p> <p>Countermeasure: Close the sample set door or the filter change door.</p>

## 7 Troubleshooting

### 7.2 Warnings

**Note:** If an error message is displayed, a serviceman should take the countermeasures to resolve the trouble.

Please contact the dealer where you purchased Typhoon FLA 7000, or contact GE Healthcare.

\* For technical inquiry and any question on application related matters, price of the products, etc., please contact us to the address on the back cover.



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